Enhancing adoption of e-Government initiatives in Tanzania

Yonazi, Jim James

JIM JAMES YONAZI

Enhancing Adoption of e-Government Initiatives in Tanzania

Enhancing Adoption of e-Government Initiatives in Tanzania

Jim James Yonazi

Publisher:
University of Groningen
Groningen
The Netherlands

Printed by:
Ipskamp Drukkers B.V., the Netherlands

ISBN: 978-90-367-4333-4
978-90-367-4334-1 (electronic version)

RIJKSUNIVERSITEIT GRONINGEN

Enhancing Adoption of e-Government Initiatives in Tanzania

Proefschrift

ter verkrijging van het doctoraat in de
Economie en Bedrijfskunde
aan de Rijksuniversiteit Groningen
op gezag van de
Rector Magnificus, dr. F. Zwarts,
in het openbaar te verdedigen op
donderdag 1 juli 2010
om 11:00 uur

door

Jim James Yonazi
geboren op 12 februari 1974
te Mafia, Tanzania

Promotores:

Prof. dr. H. G. Sol

Prof. dr. A. Boonstra

Beoordelingscommissie

Prof. dr. S. Qureshi

Prof. dr. ir. J. Nerbonne

Prof. dr.ir. J.C Wortmann

To Leah, Edna, Anna Alice, and Naomi

Preface and Acknowledgement

The application of ICT in the public sector, or e-Government, is envisioned to facilitate social and economic growth. This can be achieved if e-Government initiatives will be adopted by citizens. However, developing citizen-adoptable e-Government initiatives is challenging. This is particularly so in developing countries such as Tanzania. This is because each country has its unique contextual issues that need to be considered. In this study we have identified issues influencing the adoption of e-Government initiatives in Tanzania. We have also developed and evaluated guidelines for enhancing citizen adoption of e-Government initiatives Tanzania. The guidelines will help facilitate the identification, planning, development, and implementation of e-Government initiatives that are likely to be adopted by citizens in Tanzania and countries with similar contexts. They will allow developing countries to reap the benefit of their investment in e-Government.

Many people have supported me towards the completion of my PhD research. I am indebted to all of them. I would like to thank my promoters prof. dr. Henk Sol, and prof. dr. Albert Boonstra. They guided and challenged me, and provided me with the opportunity to conduct this research. Their guidance helped me to focus and remain determined to the complete this work. They are my academic mentors, but they also cared for my social welfare, my family, and career growth. I thank them and their families.

My sincere gratitude goes to my colleagues in the Business & ICT department at the Faculty of Economics and Business of the University of Groningen, my office mate Javid Koochaki, dr. Thomas de Boer, and Durkje van Lingen-Elzinga. Their presence and welcoming attitude provided me with a supportive working environment.

I wish to thank various people who were willing to support my research in Tanzania. Because they are many, it is not possible to mention all of them. However, on their behalf, I thank dr. Zaipunah Yonah, Charles Senkondo, David Sawe, Priscus Kiwango, Theophilus Mlaki, Keneth Wakati, Philip Saliboko, and Anderson Mwaulambo. Their support is highly appreciated.

Some people helped me in pointing out and challenging my potentials. I would like to thank Elias Otaigo, Harun Madofe, prof. dr. Thadeo Satta, prof. dr. Isaya Jairo, and prof. dr. Joshua Doriye. Their support, motivation, and challenging attitude inspired me throughout the process of completing this task.

I wish to thank the people who facilitated my stay in the Netherlands. Many thanks to Wiebe Zijlstra, Gonny Lakerveld, dr. Martin Land, and Ellen Nienhuis. Thanks to my good friends: prof. dr. Frans and Reike Tempelaar, Michael Andendekisye, Ela Nsumba, Kiula Kingu, Ntambo Lingo, Lewis Ishemoi, Hawa Tundui, Rukundo Kanyankole, Stella Fumbuka, Richard Kiangi, Ibrahim Hassan, James Mbatia, Agape Nchimbi, Annete Nara, and Magdalena Hall. Thank you all.

Some wonderful people have made an extremely valuable contribution to the completion of this work. Unfortunately they did not live long enough to witness it. However, I acknowledge their support and willingness to share their knowledge. They are prof. dr. René Waagenaar, prof. dr. Aggrey Nzali, Dr. Simaati Muniafu, and Simbo Ntiro. The knowledge they left behind, still teaches us today and the generations to come.

The completion of this work was greatly to contributed by the support of and the sacrifices made by my wife Leah, and my daughters Edna, Anna Alice, and Naomi. My absence gave them a difficult time that words may never be able to explain. It is their love and commitment that kept me motivated to complete this work. I thank and love them dearly.

My brothers and sisters deserve many thanks as well. They encouraged, supported, and challenged me to fulfill my dreams. Many thanks to all of them.

I wish to give special thanks to my parents in the African context, the Yonazis. These special people saw the opportunities I had and sacrificed a lot to make me succeed on their behalf. I wish to thank my grandparents Pastor Yonazi Salehe, and Naamini Kobonde Yonazi for making me whom I am today. I thank my parents James Yonazi, Edna Mhando, Adele Yonazi and Jeanete Senkondo. I also owe many thanks to my parents-in-law prof. dr. Gabriel K. Mbassa, and Anna M. Mbassa. Last but not least I would like to thank my uncle Mwita Bina and Auntie Dina Bina for their encouragements and wisdom. I thank them dearly.

Jim James Yonazi
Groningen, May 2010

Contents

Chapter 1
Issues around e-Government adoption

Cognizant of the benefits of e-Government, and of the pressures of stakeholders, particularly citizens, governments around the globe have increasingly embarked upon investing in e-Government. Various e-Government related projects such as policy reforms, infrastructure development, human capital development, systems and services deployment and awareness raising campaigns have been initiated. These efforts indicate a new trend that Governments are setting to improve their relationships with the public. However, adoption by the citizens is one of the key issues determining the success of such initiatives. In this research, we noted the importance of improving e-Government adoption in developing countries. Therefore we aimed to developing an approach to support the deployment of citizen-adoptable e-Government initiatives. In this chapter we provide an introduction to this research. More specifically, we discuss the concept of e-Government, and the importance of the adoption of e-Government initiatives, particularly in a developing country context. We also present a general summary of the approach we used and the outline of this thesis.

1.1 The e-Government concept

The term electronic Government (e-Government) is of recent origin. It is therefore not surprising that there is no universally agreed definition of e-Government. E-Government is defined differently by different scholars (Bhatnagar, 2004). However, as observed by Ndou (2004), it is important to produce definitions that provide a meaningful understanding of e-Government. Inadequate definitions may lead to a poor understanding. In turn, this may contribute to a poor understanding, and hence, the failure of e-Government initiatives. In this section we revisit selected e-Government definitions, and then develop our own working definition.

OECD (2003, p. 23) assorts three main categories of e-Government definitions (1) e-Government as internet service delivery, (2) e-Government as the use of ICT within the government, (3) E-Government as the capacity to transform public administration by means of information and communication technologies (ICT). The definitions entail three main emphases, namely technology (the internet), context (government) and result (transformational capacity). The categorization of these definitions is based on their area of emphasis. In other words, e-Government can be describes from the perspective of technology, context or result. Although such definitions are valuable, they may not convey the actual meaning of e-Government. This is because e-Government is more than these aspects. Therefore, it is important to have a more elaborated definition to explain the meaning and extent of e-Government.

Narrowly defined, e-Government relates to the delivery of government services by means of a particular technology. For example, West (2004) suggests that e-Government refers to the delivery of information and services online through the internet or by other digital means. Seifert (2003) also asserts that e-Government involves using information technology, and especially the internet, to improve the delivery of government services to citizens, businesses, and other government bodies. These definitions indicate that the internet is an important technology for e-Government. These and similar definitions do provide an overview of e-Government, but they may obscure the actual meaning of what e-Government actually is all about. E-Government is more than using the internet and the delivery of government services online. The internet is just one of the possible channels for e-Government. Accordingly, a broader definition is required.

Several scholers have attempted to provide broader definitions of e-Government. For instance, Schware (2005) defines e-Government as the use of ICT to enhance the

range and quality of public services to citizens and businesses while making government itself more efficient, accountable and transparent. Basu, (2004) and Bhatnagar (2004) describe e-Government as a process of harnessing ICTs to reform the way governments work, share information and deliver services to their internal and external clients. Such definitions are relatively extended descriptions of e-Government. They highlight three key elements of e-Government; process, enabler, and purpose.

The process element highlights that e-Government is a course of action intended to transform business models in the public sector. It is about changing the way governments traditionally operate. E-Government is not a static action but an ongoing reform process aimed at achieving a better public sector. The enabler element suggests that the reform process is facilitated by a wide range of ICTs. In other words, in e-Government, it is possible to utilize and incorporate the powers of more than one type of technology, such as the internet and mobile devises. Governments can make use of fitting technologies to achieve their desired reforms. However, the process and the enabler (ICT) are not the purpose of e-Government. The purpose is to ensure that government clients (i.e. citizens, businesses, and other government bodies) are satisfied with the services provided. This can be achieved through by improving the range and quality of ICT-enabled public services provided by the public sector.

The preceding discussion helps us to deduce our working definition of e-Government. We define *e-Government as the utilization of ICTs to transform and enhance the relationship of the public sector and its clients through an improved range and quality of service.* That is, e-Government harnesses the potentials of all ranges of ICTs to ensure that the public sector, governments in particular, are transformed to serve their stakeholders and exceed their expectations. Stakeholders may include citizens, businesses, employees, and other entities and other government bodies. Dovetailing

with this understanding, we emphasize on the purpose rather than the means (i.e. transformation process and technologies) of e-Government. In this study we adopt and use this viewpoint. This helps us to explain e-Government from the benefit perspective rather than mechanisms and processes.

E–Government is described as an important move to introduce changes that are needed to leverage the efficiency, effectiveness and accountability of the public sector (Cordella, 2007). Hanna et al. (2009) summarize that e-Government is intended for improving (i) the management of public finances, human resources, and service delivery, (ii) access to and the quality of public services, particularly for poor people, (iii) investment climate, e.g. lowering regulatory burdens and transaction costs, and (iv) the transparency and accountability of governments. Others scholars include spill-over effects to various sectors of the economy, for instance through the reduction of opportunities for petty corruption at the service points and improved decision making, and promote the utilization of ICT in other sectors of society (Carter & Belanger, 2005; Kaaya, 2004; Ndou, 2004; Schware & Deane, 2003).

E-Government is not a panacea for all the problems of the public sector. Several issues have been considered as the key limitations of e-Government. For example, e-Government may result into the loss of person-to-person interaction (Liu, 2006). This may cause problems in cultures where human interaction is important (Kovačić, 2005; van Greusen & Yeratziotis, 2008). Hanna et al. (2009) add that e-Government may disrupt the organizational structures, works and control powers of the public organizations. This is because e-Government does not work well with traditional top-down government bureaucracies (Yang, 2003). It is a cross-cutting phenomenon that requires an integrated vertical as well as horizontal information flow. Consequently, structural changes, legal, and process reforms need to be undertaken. This process is

not only resource intensive, but also may jeopardize the security and privacy of government information (Gil-Garcia, Luna-Reyes, 2006). Such limitations increase the risks of e-Government projects. A typical example would occur when, for some reasons, an e-Government initiative fails. This failure of e-Government will then cause loss of resources including money and time. In addition, data security and privacy can also be jeopardized. In this context, careful planning and deployment must be observed to avoid consequences of e-Governments failure.

E-Government has been explained from two prominent perspectives; interaction and evolution. The interaction perspective relates to enhancing the government's relationship with four main constituencies of stakeholders; citizens, businesses, employees, and other government bodies. The interactions are commonly referred to as Government-to-Citizens (G2G), Government-to-Businesses (G2B), Government-to-Employee (G2E), and Government-to-Government (G2G) (Bhatnagar, 2004; Jaeger, 2003; Reddick, 2004; Seifert, 2003; UN, 2005)

The evolution perspective presents e-Government as going through a hierarchy of various stages. Each higher stage represents a more advanced level of service and technological sophistication. Although different frameworks provide different ways of describing the stages (e.g. Layne & Lee, 2001; UN, 2005, p. 16; Watson & Mundy, 2001), the World Bank (WB) framework (InfoDev, 2002) presents an elaborate set of stages and characteristics of e-Government evolution. In this framework, e-Government evolves through three main stages; publishing, interaction, and transaction stages. The stages are differentiated in terms of the degree of service and technological sophistication present in each stage.

Publishing is the elementary stage of e-Government. In this stage governments focus on at enhancing access to information about, and compiled by the government. ICT channels such as websites are commonly used in this stage. The interaction stage allows two-way communication between the government and the stakeholders. At this level, functions such as emails and feedback forms are incorporated to facilitate the interactivity. The transaction stage allows direct communication. This level allows completion of activities such procurement, voting, tax return, etc. without or with minimum human interaction. A range of ICTs are employed to facilitate integration of inter and intra governmental processes and procedures. It is also important to note that the evolution from one stage to another may not necessarily be linear. Adequate innovativeness can facilitate leapfrogging from the publishing to the transaction stages. Poor performance cans also retard the progress of e-Government.

Although the internet is often presented as the primary vehicle for e-Government (e.g. Dimitrova & Chen, 2006; Ho & Ni, 2004; Jaeger, 2003; Löfstedt, 2005; Seifert, 2003. This perspective can be misleading. Electronic channels with different capabilities and functionalities may also be appropriate for respective levels of sophistication, interactions and reach. IDA (2004) presents multiple possible channels possible to facilitate e-Government. These include emails, call centres and counters, instant messaging, interactive digital TV, radios, and interactive voice response systems. Others channels are mobile devices, personal computers, public internet access points, SMS, telephone, and websites. The combination and innovative use of these technologies provides more options and advanced delivery channels for e-Government.

In e-Government a wide range of services is possible. They extend from information about the structures and functions of government organizations to integrated services

such as the renewals of drivers' and business licenses (Kaaya, 2004). Other reported e-Government services include document search, job search, address change, car registration, personal documents, filing of tax returns, and income tax declaration, just to mention a few (Cap Gemini, 2004, Cap Gemini Ernst & Young, 2004).

The evolution stages and services of e-Government can be implemented along the lines of a supply-side or demand-side focus (Holmes, 2007). The supply-side focus takes into consideration the needs and perceptions of the implementer, i.e. the government. Within this focus, implementers assume that recipients (e.g. citizens and businesses) need and will automatically adopt e-Government initiatives developed for them. This focus has been criticized for ignoring specific and contextual requirements of the recipients (Kunstelj, Kujic' & Vintar, 2007). On the other hand, demand-side focus aims at implementing e-Government initiatives by incorporating the recipients' needs and perceptions (Kolsaker, & Lee-Kelley, 2006). Demand-side-oriented e-Government implementation strives to deliver relevant, cost-effective, and personalized initiatives to the recipients. This focus assumes that recipients will be likely to adopt the initiatives that address their situation.

1.2 E-Government in developing countries

'Developing countries' is a generic term used to refer to a group of nations that require equitable and sustainable social and economic growth. Developing countries are many, and they are heterogeneous. The World Bank (2009) classifies such countries as developing economies with low-income and middle-income a GNI per capita (Table 1-1). Low-income countries have GNI per capita of $975 or less; while lower middle-income countries $976 - 3855 in 2008 (World Bank, 2008). Typical characteristics of developing countries include low growth of the income per capita, an inadequate infrastructure situation, low literacy level, a low life expectancy, high mortality rate for

children under 5 (per 1000 live birth), and a large population (Lancaster, 2001, Walkenhorst, 2003).

E-Government is a new phenomenon in the majority of the developing countries (Bhatnagar, 2004). According to the UN (2008, 2005, 2004) the majority of the developing countries are still in their nascent stages of e-Government implementation. However, e-Government is an important move towards the 21st century knowledge economy (Kumar et al., 2007). According to Bhatnagar (2004) e-Government provides developing countries with opportunities for rapid economic development. E-Government facilitates improvements in productive capacity and enhances international competitiveness. It can also help address key barriers and challenges with regard to entering the global economy and for future growth potential. Ndou (2004) observes that through e-Government, developing countries can be enabled to overcome their social-economic challenges. This can create opportunities for sustainable development in a similar way that e-commerce did for the private sector.

Table 1-1: Categorization of Countries by Income

Category	Income GROUP	GNI per capita in 2008 (USD)
Developing economies	Low income or less	975
	Lower middle income	976 - 3855
Developed economies	Upper middle income	3856 – 11905
	High income	11906+

Source: World Bank (2009)

Developing countries are increasingly trying to put e-Government on their economic agenda (Bhatnagar, 2004) because of the apparent opportunities it promises. As mentioned earlier, e-Government has the potential to improve efficiency, effectiveness, good governance, and service delivery of public sector in developing countries (Cibora & Navarra, 2005, Dada, 2006). In addition, lessons learned from the private sector, public awareness, and the influence of development agencies (e.g the World Bank)

exert pressure towards e-Government (Cordella, 2007; Ebrahim & Irani, 2005; Heeks, 2002; Ndou, 2004). In response, governments in developing countries have launched e-Government initiatives to cope with the pressure of the powers of ICT and their benefits (Bhatnagar, 2004; Tseng et al., 2008; Yonazi, Sol & Boonstra, 2007). The United Nations reports that in 2008 192 countries had various forms of e-Government initiatives (UN, 2008). The initiatives aim to improve governments' competitiveness through enhanced quality and a wider variety of the public sector services.

Many developing countries are still challenged with regards to their e-Government progress. The progress of e-Government can be measured by assessing the preparedness of countries towards offering services in an electronic environment, i.e. e-readiness assessment. E-readiness is a composite index comprising the human capital index, the telecommunication infrastructure index, and the web measure index (UN, 2008). E-readiness assessment helps governments to evaluate and take appropriate measures on their e-Government progresses and visibility.

Reports (UN, 2008, 2005) show that western countries have progressed towards sophisticated stages of e-Government. For instance, in 2008 Sweden, the world leader had an e-readiness index of 0.9157. South Africa, the African regional leader, had an e-readiness of 0.5115. The world average was 0.4514. This shows that the majority of developing countries, particularly in Africa, trail the league (Table1- 2).

Various reasons have been suggested to explain the slow progress of e-Government in the developing countries. They include the lack of adequate data systems and technological infrastructure, and unsupportive legal and institutional infrastructure. Other reasons are inadequate human capital and skills, and the lack of strategic leadership (Chen et al., 2006; Ndou, 2004, Heeks, 2002). Nevertheless, developing

countries have resorted to invest in e-Government. Through creativity and careful planning these countries can still successfully implement e-Government (The Working Group on E-Government in the Developing World, 2002).

Table 1-2: Regional e-Government Readiness Rankings

Region	2008	2005	Region	2008	2005
Africa			**Americas**		
Central Africa	0.2525	0.2397	Caribbean	0.4480	0.4282
Eastern Africa	0.2879	0.2836	Central America	0.4604	0.4255
Northern Africa	0.3403	0.3098	North America	0.8408	0.8744
Southern Africa	0.3893	0.3886	South America	0.5072	0.4901
West Africa	0.2110	0.1930			
Asia			**Europe**		
Central Asia	0.3881	0.4173	Eastern Europe	0.5689	0.5556
Eastern Asia	0.6443	0.6392	Northern Europe	0.7721	0.7751
South-East Asia	0.3395	0.3126	Southern Europe	0.5642	0.4654
Western Asia	0.4302	0.4388	Western Europe	0.7329	0.6248
Oceania	0.4338	0.2888			
World average	**0.4514**	**0.4267**			

Source: UN, 2008

1.3 E-Government adoption in developing countries

In recent years, e-Government adoption research has attracted the attention of numerous scholars (e.g. Carter & Belanger, 2005; Dada, (2006); Damodaran et al., 2005; Dimittova & Chen, 2006; Ebrahim & Iran, 2005; Gilbert, Belestrini & Littleboy, 2004; Ho & Ni, 2004; Kamal, 2006; Moon & Norris, 2003; Titah & Barki, 2005). The reason for that is that the potential benefits of e-Government can only be obtained if the related initiatives are accepted and used by the intended users (Margetts 2006; Tung & Rieck, 2005). However, adoption remains yet a key issue that challenges the success of e-Government initiatives. Accordingly, scholars observe the importance of

understanding, explaining and guiding the process and issues around the adoption of e-Government.

To developing countries, e-Government adoption is of particular importance. There are several reasons highlight this importance. Firstly, e-Government promises many attractive benefits (Ndou, 2004). However, as argued by Margget (2006) the benefits of e-Government can only be reaped if citizens will adopt the e-Government initiatives intended for them. Secondly, e-Government is a resource-intensive western innovation with a high failure record in a developing countries context (Heeks, 2002). However, the resources of developing countries to afford experimentation and frequent are limited. Therefore the implementation of e-Government in developing countries requires sound decisions in developing citizen-adoptable initiatives. This will help avoid experimentation and reduce the risk of failure of e-Government due to the low adoption rateof the initiatives.

E-Government adoption in developing countries is challenged by a range of issues. These include history and culture, technical staff availability, infrastructure, citizens' issues, and issues related to government leadership (Chen et al., 2006). These aspects are well established in developed countries, yet underdeveloped in most of the developing countries. From the adoption perspective, the issues pose a problematic situation for ensuring that governments deploy citizen-adoptable e-Government initiatives. Therefore they challenge the progress of e-Government initiatives and call for attention.

1.4 E-Government in Tanzania: an overview

This research was conducted in Tanzania, a typical developing country context. In the World Bank framework (1.2) Tanzania falls into the group low-income countries. In 2008 Tanzania had a GNI per capita of 1,230 (UN, 2008). Accordingly, the government

of Tanzania is implementing various development strategies aimed at bringing sustainable social and economic development in the country. Examples of the strategies include i) the National Poverty Reduction and Monitoring Strategy (URT, 2005), ii) Zanzibar Strategy for Growth and the Reduction of Poverty (RGoZ, 2009), and ii) KILIMO KWANZA[1] (TNBC, 2009). The strategies, commonly aim at achieving i) a high quality livelihood, ii) peace, stability and national unity, iii) good governance, (iv) an educated and learning society imbued with an ambition to develop, and v) a competitive economy capable of producing sustainable growth and shared benefits.

The government of Tanzania recognises that ICT is the key facilitator of the development strategies in the country. The National ICT Policy (URT, 2003) emphasizes on the application of ICT in various development sectors such as health, education, government, infrastructure, and agriculture. Accordingly, the government acknowledges that e-Government has the potential to enhance its productivity and effectiveness for sustainable national development (URT, 2003, p.3). Therefore, the government has been investing in various e-Government initiatives (Sawe, 2007, UN, 2008). Kobb (2008) relates e-Government to public sector reform programmes intended to improve service delivery in the government Tanzania. The reform programmes include the Civil Service Reform Programme from 1991 to 1999, and the Public Service Reform Programme from 2000 to 2007. Although it had not been an explicit component in the previous reform programmes, e-Government emerged to be a necessary enabler towards the successful reformation of the public service.

The President's Office Public Service Management (PoPSM) department is the overseer of e-Government in Tanzania. This responsibility involves coordination and funding of e-Government country wide. The office has a significant role to ensure that

[1] A slogan meaning 'Agriculture first'.

Tanzania achieves an adequate level of e-Government implementation. Currently, PoPSM is involved in the process streamlining e-Government across the public sector, and preparing the national e-Government strategy in Tanzania.

E-Government in Tanzania is still in its nascent stages. However, numerable initiatives have been implemented. They include the establishment of the Government Network Centre intended to house the central government ICT node. Other reported initiatives include training over 3000+ government officials, purchasing and installing ICT equipment, networks, and software, and implementating of internal government systems (Sawe, 2007). In addition, individual government organizations have been implementing initiatives based on their organizational priorities and budgets. The initiatives are aimed at delivering improved services in terms of quality, timeliness and efficiency (URT, 2008).

Various citizen-focused e-Government initiatives are being implemented in Tanzania. They are aimed at allowing the government to be reachable, and deliver public services more transparently, efficiently, and effectively (URT, 2008). A typical example is the e-Government initiatives at the Ministry of Lands and Human Settlements. The ministry has implemented various initiatives that facilitate application, tracing and obtaining land related document in a more efficient manner. Such processes used to take up to six months for completion. Currently citizens can trace their applications, receive issue-of-plots on daily basis, obtain land titles within a week, and obtain land inquiry in hours (E. Nyabusani, personal communication, 17 October, 2007). This has allowed citizens to save time and money which would otherwise be spent in following up their requests. It has also increased efficiency and transparency in the ministry. The government conserve that such initiatives may also help to curb corruption and

enhance accountability of government officials (Z. Yonah, personal communication, 15 September, 2009).

1.5 Issues concerning e-Government in Tanzania

1.5.1 General implementation context

E-Government implementation in Tanzania resembles that of many other developing countries. According to the UN (2008), in 2008 Tanzania had an e-readiness index of 0.2929 (Table 1-3). The average global and East African regional e-readiness indices were 0.4514 and 0.2879 respectively. This indicates that Tanzania performs low in terms of web participation, infrastructure, and human capital capacity indices, i.e. 0.2258, 0.024, and 0.631 respectively. Accordingly, Tanzania falls behind other contemporary East African countries (i.e. Kenya, Uganda, and Rwanda).

Table 1-3 E-readiness of some selected East African Countries

Country	2008	2005	Rank in 2008	Rank in 2005
Mauritius	0.5086	0.5317	64	52
Kenya	0.3474	0.3298	124	122
Uganda	0.3133	0.3081	133	125
Rwanda	0.2941	0.2530	142	143
Tanzania	0.2929	0.3020	144	127
Burundi	0.1788	0.1643	174	166
Region	0.2879	0.2836		
World	0.4514	0.4267		

Source: UN, 2008

Tanzania's e-readiness is further elaborated by the International Telecommunication Union (ITU). ITU (2009) reports that the access to infrastructure ICT infrastructure in Tanzania is still a challenge in the Country. The report shows that in 2008 the country had about 123000 fixed phone lines. This is equivalent to 0.3 fixed phone lines per 100 inhabitants. The internet speed was 58.1 Mbps, and 240 bits per second per user. The

proportions of households with computer and with Internets were 2.3 and 0.6 respectively. In December 2009 there were 13,024,798 mobile phone subscribers in Tanzania (URT, 2009). This is equivalent to 32% of the population of about 40 million in 2009 (URT, 2009). This situation indicates the inadequacy of the ICT infrastructure and indicates Tanzania's low readiness toward full e-Government implementation.

The UN and ITU analyses are supported by Mutagaywa, Kinyeki, & Ulanga, (2007). They report that the current progress of e-Government in Tanzania has been impacted by the inadequacy of telecommunications infrastructure. For instance, at the time of this research, the country did not have a national broadband connectivity. Data and internet services have been provided through VSAT and leased lines from private companies. Additionally, connectivity availability is mainly localised in urban areas, particularly in Dar es Salaam[2]. The situation is similar in other supporting infrastructure such as roads and electricity in the country. This has caused a delay and difficulty in deploying more e-Government initiatives. Consequently, the country had low performance and visibility in the international league.

E-Government progress in Tanzania is also challenged by inadequate funding, as well as insufficient technical human capacity to support and deliver e-Government services. E-Government initiatives have been funded by the Performance Improvement Fund. The fund was established to support changes identified in the strategic plans of government Ministries, Departments, and Agencies (MDAs) (see: Bana & Shitindi, 2009). However, the fund has been heavily dependent on donor support. It has also not been sufficient to support countrywide e-Government deployment. Few government organizations are able to amass internal resources to fund their own initiatives. This

[2] Dar es Salaam is the business capital of Tanzania

not only causes limited service deployment, but also insufficient resources, such as human capacity to support and deliver e-Government.

Planning and coordination are other issues challenging e-Government in Tanzania. Although there is a mandated office for e-Government coordination, individual organizations have been identifying and implementing initiatives on their own. The office has not been able to coordinate e-Government country-wide. An important reason for this is the lack of a master plan to guide the identification, prioritisation, and implementation of e-Government. Instead, planning is done by each individual organization, and coordination is mainly biased to funding. Little attention has been paid to issues such as integration, standardisation, and interoperability. The consequence is the emergence of substandard and fragmented initiatives with limited value and visibility, and uncertain continuity.

Limited awareness and understanding of e-Government is another challenging issue. Not only the intended users (e.g. citizens and businesses), but also for government officials are expected to implement e-Government. As a result, e-Government is perceived as automation or as a website creation projects. This affects decisions on other important issues such as laws and regulations necessary for transformation in favour of e-Government.

1.5.2 **E-Government adoption in Tanzania**

We have already discussed the importance of e-Government adoption. We also highlighted the value of e-Government adoption for developing countries. The importance of e-Government adoption is equally relevant to Tanzania. However, only a few studies that have empirically studied e-Government adoption in Tanzania have been identified. The closest studies are that of Kaaya, (2004) and Mgaya (1999). While Kaaya (ibid) investigated the implementation of e-Government in East Africa, Mgaya

(ibid) examined the adoption of Group Support Systems by the government. No study has established the reasons underlying citizens' decisions towards the adoption of e–Government in Tanzania. As a result the understanding of the adoption situation and the actual issues influencing the uptake of e-Government in Tanzania country is still limited.

The preceding discussion highlights an important deficiency in theory as well as practice. Empirical studies on e-Government and e-Government adoption in Tanzania are still rare. As a result the literature does not provide information concerning adoption issues relevant to Tanzania thus showing a theoretical gap. More specifically, there is no guidance is available on how the Government of Tanzania can ensure the adoptability of its e-Government initiatives. Consequently, there is a risk that the e-Government practitioners will be stymied. They are uninformed about the issues influencing general ICT deployment, and those influencing adoption decisions. This means that the current initiatives have been implemented with an inadequate understanding of the issues that determine their adoption. If these issues remain unaddressed, the resulting cost will add a heavy burden to Tanzania's taxpayers and other development partners.

1.6 Research aspirations

We would like to highlight several issues from the discussion above that attracted our attention. They are the context of implementation, status of adoption theories, and e-Government adoption in Tanzania.

E-Government is an imported innovation in most of the non-western developing countries (Heeks, 2002). Accordingly, the fit between e-Government design and the context must be taken into consideration. Therefore, knowledge, research and theories are needed to find ways to explain and promote e-Government adoption in developing

countries. However, existing adoption theories originate mainly from western countries contexts (Shin, Song & Kang, 2008). The gathered from developing countries contexts are limited. But the value of these theories can not be denied. However, as noted by Maumbe et al. *(2008)* and Tseng et al., (2008) contextual issues determine the theoretical relevance for explaining e-Government adoption. With regard to contextual issues in developing countries, existing theories may have limited power to explain the adoption process in that context.

We also observed the dilemma that the existing theories present to e-Government practitioners (2.2). The theories are many, they are varied, and they place with different emphases. They also present a myriad of issues that may explain the adoption of e-Government initiatives. At present, there is lack of guidance on how the various suggested potential adoption issues can be prioritized and addressed. This lack causes practitioners to fall into a quandary regarding to prioritizing issues to address. Respectively, initiatives are either deployed with minimum consideration of adoption issues or in a trial-and-error fashion. Consequently, e-Government initiatives will continue to fail, and the envisioned benefits will not be reaped.

In addition, from Choudrie and Dwivedi, (2005) and Tung and Rieck (2005) we observed that previous adoption studies have paid attention to the supply-side than to the demand-side. Kunstelj, Kujic' and Vintar (2007) observe that for years the government did not pay much attention to users requirements when designing their e-Government initiatives. The government assumed that users i.e. citizens and businesses, are in need of the electronic services. This assumption may put the fit between e-Government and user needs at risk. Accordingly, currently little is known about why and how citizens adopt e-Government. It is therefore important to understand the reasons for adoption in order to design appropriate ways of attracting

citizens to adopt e-Government initiatives. Therefore, we focused our attention on the demand-side of e-Government adoption, on the citizens in particular.

The preceding discussion presents an important theoretical and practical concern for e-Government implementation, particularly in developing countries. The benefits of e-Government can only be reaped if high adoption rates are attained. However, existing theories identify a range of issues that may explain e-Government adoption in developing countries. They partially provide guidance on how developing countries can approach and enhance the adoption of e-Government initiatives. Consequently, practitioners remain ill-guided in planning for and deploying initiatives that are likely to attain a high adoption rate. E-Government initiatives in developing countries are thus prone to failure.

1.7 Research objective and questions

The above problem highlights the need to develop a guiding framework for enhancing citizen adoption of e-Government initiatives in developing countries. In this study, we used Tanzania as our study context. Tanzania, a typical African developing country, provided us with a perfect context for this study. Furthermore, the issues highlighted above are manifested in the e-Government situation in the country. Although Tanzania is investing in e-Government (Sawe, 2007), the country is yet to achieve much progress (UN, 2008). Again, little is known on why Tanzanian citizens would adopt or reject e-Government initiatives. We therefore aimed at investigating e-Government initiatives that may involve the exchange of information between citizens and the government, i.e. citizen-focused initiatives. This resulted in the following research question:

> What are the issues influencing citizens' adoption of e-Government initiatives in Tanzania, and how can we design a solution for enhancing citizen adoption of e-Government initiatives?

To answer this question, we developed a number of specific research questions that we will further elaborate below.

Research question 1

What are the available theories used to explain e-Government adoption? This question was intended to help us gain a detailed understanding of the available adoption theories. It also facilitated our analysis of the relevance of the theories as well as their application in developing country contexts. This understanding was crucial in highlighting theoretical gaps, gaining useful insights for future activities, and deciding on the relevant research method that we could use in this study. The question is partially answered in chapter 1 and will be further elaborated in chapter 2.

Research question 2

What is the current situation of citizen adoption of e-Government initiatives in Tanzania? This question will be answered in chapter 3 and 4. It was intended to inform us about two important matters: the citizen-focused e-Government initiatives available, and the extent to which citizens, in Tanzania, have adopted the initiatives.

Research question 3

What issues underlie citizen adoption of e-Government initiatives in Tanzania? It was important to establish the issues that could explain the situation emerged in question 2. This was not only necessary to explain the adoption situation, but also to form a necessary base for developing a fitting approach to address the situation. Research

question 3 was formulated to facilitate achieving this purpose. It will be answered in chapter 3 and 4.

Research question 4

How can we develop an approach for enhancing citizen adoption of e-Government initiatives in Tanzania? After understanding the adoption situation and its underlying issues, we needed to develop a new approach to address the situation. This question was intended to find a new way of improving citizen adoption of e-Government initiatives. The question will be answered in chapter 5. The answer consists of a set of guidelines for enhancing citizen adoption of e-Government initiatives. The testing of the guidelines will be presented in chapter 6.

1.8 Research approach

1.8.1 Research philosophy

Research philosophy refers to the perspectives that researchers possess in the process of knowledge development (Trochim, James & Donnelly, 2007). A research philosophy provides an understanding of the values and assumptions underlying a particular investigation. It encompasses issues concerning the nature of reality, what can be known, and how it can be known (Crossan, 2003). The assumptions determine the choice of research strategy and the methods to be followed in a particular research project (Saunders, Lewis & Thornhill, 2007).

The guiding philosophy for this study was design science. In design science, researchers focus on IS problem solving through system development, design of human-computer interfaces and architectural designs for computing and communication (Ramesh & Rao, 2005). In other words, researchers seek to understand real-life phenomena, identify practical problems, and design explicitly

applicable solutions introducing appropriate artefacts that can serve human purposes (March & Smith, 1995; Peffers, et al., 2008). The outputs of design science are artefacts in the shape of constructs, guidelines, models, methods, and implementations (Hevner, 2007; March & Smith, 1995).

Hevner (2007) presents three important interdependent circles in design science research (Figure 1.1), namely the relevance, design and rigour cycles. The relevance cycle provides requirements from the contextual environment, and in turn introduces research artefacts for this environment. The rigour cycle provides theories, experience and expertise grounding from the existing knowledge base. It also adds the knowledge generated by the research to the existing knowledge base. The design cycle is intended for the actual construction of the expected solution and its evaluation. It also seeks and provides feedback from and to the environment and the existing knowledge base.

According to March and Smith (1995), the output of design science consists of constructs, models, methods, instantiations, constructs or better theories. They posit that constructs are the conceptual vocabulary of a problem/solution domain. Constructs emerge during the process of understanding the problem and are refined all through the design cycle. A model consists of a collection of propositions that explain how constructs are related. Furthermore, methods consist of a set of steps (i.e. an algorithm or guideline) used to achieve a certain task. Instantiation relates to the realization of constructs, models and methods within an environment. Better theories relate to the improvement of the existing theories (Vaishnavi & Kuechler, 2008).

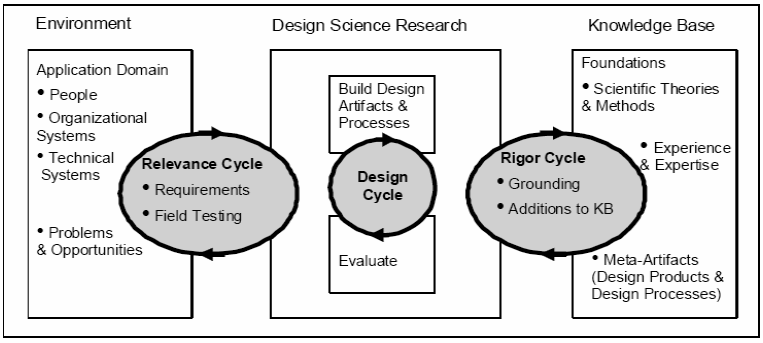


Figure 1-1: Design Science Research Circles (source: Hevner, 2007)

Design science philosophy fits well with the objective of our study. This is illustrated by our research questions, i.e. to understand the citizen-adoption situation of e-Government initiatives in Tanzania (relevance – Q1); to find theoretical validation and grounding (rigour – Q2); and to develop a fitting solution for how the situation can be improved (design – Q3&4). Conclusively, our research will introduce a solution for improving the adoption situation of e-Government initiatives in Tanzania. It will contribute to increasing the chances of success of such initiatives in Tanzania. In turn, it will help avoid the loss of resources caused by the failure of e-Government initiatives due to the inadequate adoption of such initiatives.

1.8.2 Research strategy

A research design consists of the strategy and plan along the lines of which a study will be conducted. The choice of the design depends on the nature of the research problem, the objective and the status of the theory development in the research field in question (Cooper & Schindler, 2000). Accordingly, we took these aspects into consideration when choosing our research strategy.

Nature of the research problem

E-Government is a Euro-American innovation; however, we studied its implementation in an African developing country. Accordingly, we expected various issues to challenge and shape the nature of the study in terms of differences with the Euro-American context. These issues may include national culture, type of government and the political dynamics of a country.

Research objective

In this study, we wanted to examine e-Government adoption from the citizen perspective. We anticipated encountering data availability challenges as e-Government and adoption research are still new in Tanzania. Consequently, evaluation by stakeholders, especially citizens, of e-Government initiatives could be difficult to obtain.

Status of theory in e-Government adoption

As adoption theories and factors are many and diverse, we were not sure in advance which available theory would be appropriate for studying the adoption of e-Government initiatives in Tanzania.

The reasons mentioned above highlight important challenges anticipated for this study. We hence designed three main phases to facilitate and guide the research process.

Phase I. Initiation phase

Exploration is useful when researchers want to gain a clear understanding of the research problem. Through exploration, researchers develop clearer concepts, establish priorities, develop operational definitions, and improve the final research design (Cooper & Schindler, 2000). Using a Grounded Theory Approach (GTA), we engaged in inductively identifying available e-Government initiatives and issues that may influence their adoption by citizens. We aimed to enhance our understanding of

the results from the literature, helping us to understand and notice similarities and differences. The main output of this phase was an initial model, which helped us scope our study. It also helped us understand potential e-Government initiatives that we could investigate in this study.

Phase II. Identification of adoption issues in Tanzania

In this phase, we aimed to identify issues influencing citizen adoption of specific e-Government initiatives in Tanzania. We utilized our understanding from phase I to study particular e-Government initiatives. We then engaged in studying the issues influencing the adoption of specific e-Government adoption initiatives from three cases. This activity allowed us to improve our understanding concerning e-Government adoption in the country. The understanding was useful in clarifying the adoption problem and developing a fitting solution in phase III. The main output of this phase is the refined model conveying the factors influencing citizen adoption of e-Government initiatives in Tanzania.

Phase III. Clarifying the adoption problem and developing a solution

Phase III involved the processes determining the requirements and the development of the intended solution, i.e. the guidelines. Its main activities involved reflecting on the issues identified in the previous phases, and proposing appropriate measures on how they be addressed. While the results of this research provided the requirements, theoretical synthesis and practical propositions provided us with ways of addressing the issues.

Phase IV: Evaluation of the approach for enhancing e-Government adoption in Tanzania

This phase involved the evaluation of the proposed solution. It included propositions in the shape of guidelines and their corresponding checkpoints. We evaluated these by using expert opinions of three additional case organizations. The main output of this

phase consists of the guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania.

1.8.3 Research instruments

There were various instruments available for facilitating the data collection process. These include interviews, questionnaires, document analysis, observations, Focus Group Discussions (FGD), etc. (Lancaster, 2005). However, the choice of data collection instruments is determined by the nature of the information needs intended to achieve the objective of the study and data sources (ibid.). In other words, each instrument is known to best facilitate the collection a particular kind of data.

We based the choices of our data sources and data collection techniques on the information needs of this research. As we wanted to establish the most relevant factors influencing the adoption by the case organizations, we needed to gather information from the case organizations and their stakeholders. The information gathered was mainly based on people's (e.g. organization managers and customers) experiences and opinions, and on organizations' (governments) actions concerning the issues of adoption. Ergo, multiple instruments were applied for this purpose (Lancaster, 2005; Welman & Kruger, 2001). Interviews, Focus Group Discussions (FGD), documentary analysis, observations and questionnaires were the main instruments used.

1.8.4 Data collection and analysis approach

Phase I and II

A grounded theory approach was used during phase I. In this phase, data were collected and analysed, patterns were identified, and categories were allowed to emerge inductively (Gill & Johnson, 2002). During phase I, matching-pattern issues

were organized into an initial conceptual model. The model was then used as a starting point for phase II.

A qualitative data-analysis approach was used in phases I and II. In phase I, the process followed Straus and Corbin's (1990) data analysis framework. In this process, initial coding of data, followed by their focused coding, was performed. At the beginning of phase I, open coding was used to generate data. However, as codes became more available, similar data were labelled using codes from the list.

In phase II, we generated an initial code list from the categories identified in phase I. The code list was used to label data from the case organization, aiming to verify the relevance of the ideas suggested. However, whenever we encountered a fresh idea, a new code was assigned to it. This coding practice was useful because it allowed us to directly observe how the categories were relevant in each case. However, we were careful not to be obscured from other new ideas.

Axial and focused coding involved scrutinizing the codes and categories to establish their relationship with the adoption of e-Government. Memos were then written to explain the resulting categories and the relationship with the adoption phenomenon. Whenever a concept was encountered and needed clarification, a follow-up interview, mainly over the phone, was initiated and clarification was sought.

A qualitative data analysis application, Atlas.ti, was used to manage and analyse the collected data. It allowed us to flexibly manage, code, relate, merge and modify the ideas identified. By using this application, one hermeneutic unit (database) was created in phase I, and one for each case investigated in phase II. However, at some point, MS Excel 2003 was used to provide a more visible data-sorting platform.

Phase III

This phase was the design phase. It involved the development and evaluation of the guidelines. During the development, we used the issues refined in phase II, existing literature, and our own creativity and reasoning to formulate the guidelines. Issues from phase II provided us with what must be addressed to improve the citizen adoption of e-Government initiatives. The literature provided propositions on how the issues could be addressed. We also used our knowledge of the research domain, and experience we gained from practice and throughout this research. This allowed us to synthesize and fine-tune the guidelines.

During evaluation, a questionnaire containing various proposed guidelines was used to collect data. The instrument was administered to e-Government practitioners in three additional cases. Our purpose was to elicit expert evaluations of the proposed guidelines. Rating was the main strategy used to capture the evaluations. The resulting data were analysed statistically using MS Excel 2003. The results helped us refine the guidelines to their present state.

1.9 Research contribution

In this research, we noted the importance of citizen adoption of e-Government initiatives in developing countries. We acknowledged the importance of enhanced adoption of the initiatives. However, theory and practice do not provide guidance in developing e-Government initiatives that are more likely to be adopted by the citizens. In this study, we sought to find a way of enhancing citizen adoption of e-Government initiatives in developing country contexts. However, the existing literature could not provide facilitation.

From a design-science perspective (Hevner, 2007), the set of guidelines presented in chapter 5 is the main contribution of this research. The guidelines illuminate and

suggest ways to enhance citizen adoption of e-Government initiatives, which enriches our understanding and knowledge concerning e-Government adoption. They also inform us on how to influence various issues to enhance the adoption of e-Government initiatives. This provides both theoretical and practical contributions.

i. The guidelines are developed using both existing and new adoption concepts as well as perspectives from a developing country. They contribute to the availability of theories that can explain e-Government adoption in developing countries. The guidelines contribute towards bridging the theoretical gap of the lack of a guiding framework for enhancing the adoption of e-Government initiatives.
ii. In practice, the guidelines provide practitioners in developing countries with a new toolkit to enhance the adoptability of their initiatives. If applied, the guidelines will facilitate decision-making during the inception, design and deployment of e-Government initiatives. In this way, initiatives with a high adoption rate will be deployed. A high adoption rate will facilitate achieving the purpose and avoid failure of e-Government and the loss of scarce resources.
iii. Through this research, other possible research areas have been identified. For example, research areas such as the marketing of e-Government services are yet receive adequate attention. Further research in such areas will enrich our understanding of the implementation of ICT in the public sector.

1.10 Thesis outline

The completion of this research involved various activities. We will present the activities in different chapters. In this section, we will provide an outline of the chapters. The outline is summarized in Figure 1.2.

In chapter 1, we will introduce the key research concepts. We will explain the research area and the justification of conducting this research. We will also provide an overview

of the general approach we took in this study. We will then proceed with chapter 2. In this chapter, we will review the literature regarding the adoption of e-Government in general. We will discuss and identify the theoretical gap in the relevance of current adoption theories to developing countries.

Chapter 3 will present the activities undertaken in the initiation phase of this study. We will present the activities and findings that helped us scope the study. In chapter 4, we will identify and confirm the issues influencing the citizen adoption of e-Government initiatives in Tanzania. Chapter 5 will present our interpretation of the problem concerning citizen adoption of e-Government initiatives in Tanzania. Furthermore, we will design our solution for enhancing the citizen adoption of e-Government initiatives in Tanzania. The evaluation of the guidelines will be presented in chapter 6. In this chapter, we will provide the approach, results and final status of the proposed solution. Finally, in chapter 7, we will reflect upon the whole research project. We will evaluate our research questions, approach, findings, and also recommend issues that need further recommendation. Chapter 7 will mark the end of this thesis.

Chapter	2	3	4	5	6	7
Phase	Phase I		Phase II	Phase III	Phase IV	
Outputs	Theoretical analysis	Initial model of e-Government adoption	Refined model of e-Government adoption	Guidelines for enhancing e-Govovernment doption	Evaluation and adjustments of the guidelines for enhancing e-Govovernment doption	Epilogue
Activities	Theory analysis	Initiatial exploratory study	Case studies	Guidelines design and development	Guidelines evaluation	Evaluation of the research
Data Sources	Literature	Practitioners, users and nonusers, international experts, observations, literature	Model from phase I, Cases 1, 2 & 3	Refined conceptual model from Phase II, Literature, practical experience, & interpretation	Experts' opinion from case 4, 5, & 6	Outcomes of chapter 1 to 6
Methods	Literature review	Interviews, FGDs, Observations & Literature review	Interviews, FGDs, Observations & Literature review	Literature review & interpretation	Questionnaire	Evaluation
Guiding questions	What are the available relevant adoption theories?	What are the potential issues to influence the adoption of e-Government initiatives?	What are the potential issues to influencing the adoption of specific e-Government initiatives?	How can the issues be approached?	How relevant, useful, and usable are the proposed guidelines?	How can we evaluate the whole research project?
Procedures	Analysing & comparing available adoption theories	Inductively identifying e-Government initiatives, and adoption issues	Identifying adoption issues of specific e-Government initiatives in 3 cases, comparing with the initial issues, and developing a refined model	Synthesizing the guidelines using literature, model from phase II, and interpretation	Evaluating the guidelines using experts opinion in 3 cases	Discussion

Figure 1-2: Research Flow and Instruments

Chapter 2
Theories on e-Government adoption

In this chapter, we will analyse theories related to the adoption of e-Government initiatives. The purpose is to gain and present a detailed theoretical understanding of e-Government adoption. This understanding is crucial for informing us about methods to adopt, theoretical and practical limitations, and the required contributions in future stages and activities. We will first explore the concept of adoption of information systems and, more specifically, adoption of e-Government. Furthermore, we will present the status quo and the relevance of adoption theories in the developing country context. We will also highlight key theoretical and practical limitations of the current e-Government theories in developing countries. Finally, we will build the case for this study by discussing the need for a new approach to enhancing the adoption of e-Government initiatives in developing countries.

2.1 Adoption of information systems

The word *adoption* is closely related to *acceptance*. In information systems research, the two terms have been used interchangeably. Few authors have attempted to define the precise meanings of the terminology in their works. For example, Hernandez, Jimenez and Martin (2009) consider adoption as the decision to use something (e.g. a new channel), and acceptance as post-adoption perception. Contrarily, Rogers (1995) argues that adoption involves the process of communicating a new innovation to achieve the acceptance of intended potential adopters. Although it is not our intention to resolve this debate, it is important to use terminology that accords and conveys the author's intended meaning. We will therefore redefine adoption and the intended meaning in this research.

The Concise Oxford Dictionary (Soanes & Stevenson, 2008) defines *acceptance* as '*...consent to receive or undertake something*' (Oxford, 2009, p.7). It defines *adoption* as '*...the act of taking up and treating as one's own*' (17). Acceptance is related to '*agreeing*', while adoption refers to '*choice*' and *'ownership'*. We will adhere to the meaning of the term adoption. We observe that adoption is more than just agreeing to a new idea or method. This is particularly the case when one has several choices to make. It is about choosing a new innovation, taking it up, and owning it into one's life. Thong & Yap (1995) emphasize that adoption relates to the full utilization of an

innovation as intended by the designer. Hence, we will define adoption as the process through which a new innovation is deployed, accepted and used by the intended potential users. It is the result of the users' comparison of the uncertain benefits and costs of using the new technology (Hall & Khan, 2003). Accordingly, adoption requires and involves a considerable understanding of and balancing between designer intentions and user expectations.

In information systems (IS) research, adoption relates to the acquisition and utilization of ICT to support business (Sarosa & Sri Lestari, 2006). Adoption occurs when intended users accept and opt for using new innovations as their first choice in their business activities. In this context, information systems are adopted to enable and drive business activities. The purpose is to leverage business functions for improved performance and profit. Succinctly put, the adoption of information systems envisions enhanced productivity, quality, cost reduction, efficiency, effectiveness and agility (Teoa, Lina & Lai, 2009; Zain, et al., 2005).

Scholars have developed various theories to explain the information technology adoption process. They also present multitudes of associated factors that influence the process. Examples of such theories include the theory of reasoned action (Ajzen & Fishbein, 1975), the theory of planned behaviour (Ajzen, 1985), diffusion of innovations (Rogers, 1995) and the technology acceptance model (Davis, 1989). Gilbert and Balestrine (2004) identify three approaches with sound theoretical and empirical bases for studying the adoption and diffusion of information systems. They include the Diffusion of Innovation (DOI) by Rogers (1995), the Technology Acceptance Model (TAM) by Davis (1989) and the application of existing frameworks to technology (e.g. Parasuraman, 1985). In 2003, Venkatesh, et al. proposed another model, the Unified Theory of Acceptance and Use of Technology (UTAUT), which has attracted the attention of many researchers. We will use these derivations to explore the adoption concept to which this study offers its contributions.

In DOI, adoption is the acceptance of innovation taking place in five steps: knowledge, persuasion, decision, implementation and confirmation (Rogers, 2003). Adopters can be categorized as innovators (2.5%), early adopters (13.5%), early majority (34%), late majority (34%), and laggards (16%). Social networks, such as media and interpersonal

contacts, provide information and influence adoption opinion and decision over time. DOI suggests that perceived characteristics of an innovation, such as relative advantage, compatibility, complexity, triability and observability, determine the adoption or rejection of an innovation.

TAM is a popular model in IS adoption research (Bagozzi, 2007). TAM suggests that technology acceptance is determined by perceived usefulness and perceived ease of use of an innovation. In addition, perceived ease of use influences perceived usefulness. Perceived usefulness and perceived ease of use are both influenced by external variables such as system characteristics, organizational influences, and the nature of development process. Davis, Bagozi and Warshaw (1989) dropped attitude towards use in their refined TAM model. Davis (1989) posits that perceived usefulness refers to the degree to which a person believes that using a particular system would help to perform his/her job better, while perceived ease of use refers to the degree to which a person believes that using a particular system would be free of effort.

UTAUT (Venkatesh, et al., 2003) is another theory used in IS research. It was developed as an attempt to unify the constructs of the prominent competing IT acceptance models, including TAM. UTAUT conveys four key constructs, i.e. performance expectancy, effort expectancy, social influences and facilitating conditions (Venkatesh, et al., 2003). Performance expectancy relates to the degree to which an individual perceives that using a new innovation can facilitate improving his/her performance. Effort expectancy measures the degree to which an individual perceives that the innovation will be easy to use. These two constructs are similar to those from TAM. Social influence refers to the degree to which an individual perceives that an important person around him/her feels that he/she should use the innovation. Finally, facilitating conditions measure the degree to which an individual perceives that organizational and technical infrastructure exists to support the use of the system.

Venkantesh et al. (2003) suggest that adoption will occur when users perceive that performance expectancy, social influence and facilitating conditions are high. Contrarily, a high degree of effort needed to use an innovation will not favour adoption. Other researchers (e.g. Al-Qeisi, 2009; Li & Kishore, 2006) have tried to extend the

model, because the significance of the UTAUT factors may vary in different contexts. This makes it necessary to identify contextual interpretations and implications.

While DOI, TAM, and UTAUT predict adoption from a preconsumption perspective, scholars have also applied existing postconsumption models to study the process of technology adoption (Gilbert & Balestrine, 2004). In this perspective, scholars (e.g. Carter & Bellanger, 2005; Parasuraman et al., 1991; Townsend, 2000) focus on the domestication potentials of new innovations (Colesca & Liliana, 2009). In their view, innovations that allow users to make them their own will achieve higher adoption rates. SERVQUAL (Parasuraman et al., 1991) is a popular theory in this category. SERVQUAL emphasizes that quality is an important aspect in determining the success of an information system. IS quality is a function of the user evaluation of tangibility, reliability, responsiveness, assurance and empathy.

The preceding discussion presents examples of generic theories used to explain information system adoption. Although the theories differ in their specific constructs, they highlight the importance of adoption in the success of information systems. They also show that successful adoption of an information system is a function of addressing multiple issues. For instance, while the theories agree upon the importance of ease of use, they also recognize the role of aspects such as responsiveness and assurance. Other theories recognize other aspects such as culture and human issues (Carter & Weerakkody, 2008; Kovačić, 2005) to play a role in information system adoption. This implies that adoption requires a consideration of multidimensional aspects, or else little will be achieved by information system deployment.

2.2 Issues concerning the adoption of e-Government

E-Government adoption research is a derivative of mainstream IS adoption research, particularly research on e-business and e-commerce. However, e-Government adoption research focuses on the application of ICT in the public sector. This area interests scholars because of its nature, complex interactions and structures, multiple stakeholders, and the politics involved in the public sector (Hans, in Noris, 2007). In addition, the introduction of e-Government does not necessarily replace the traditional means of contacting governments. It provides users with a relative freedom (Boonstra, 2003) to choose between e-Government and traditional government. Consequently,

there has been a rationale and continuous quest for understanding the reasons behind users' choices. The resulting theories are expected to facilitate the process of deploying potentially adoptable e-Government.

Adoption plays an important role in the successful implementation of e-Government. Several issues highlight the rationale of adoption. First, e-Government implementation takes place in the public sector, particularly within the government. However, governments are mainly established to provide services to the public (Scholl, 2006). Unlike the business sector, governments are not-for-profit organizations. Hence, their initiatives, including e-Government, are also not for profit. Accordingly, it is difficult to deduce the gained tangible economic value. Secondly, the public sector concerns a political context. Therefore, introduction of e-Government faces a complex social-political environment (ibid.). Accordingly, the processes of positioning, structuring and introducing new ways of working are difficult. As a result, e-Government projects are expensive in terms of resources and the time required for implementation. Unfortunately, such scarce resources are obtained from taxpayers and sometimes from donors. Margetts (2006) observes that the value and benefits of e-Government can only be attained if intended users, particularly citizens, will adopt the initiatives.

The above discussion suggests that adoption is an important aspect in the success of e-Government initiatives. It is only when citizens and businesses adopt e-Government that its benefits will be realized (Karahanna, Staub & Chervan, 1999; Tung & Rieck, 2005). Through adoption by citizens and business, government will experience the value of their taxes and effort. Hall and Khan (2003) reiterate that the contribution of technology to economy can only be realized when and if the technology is adopted by users, otherwise little will be gained. It is, therefore, imperative to understand the factors that influence the adoption and use of IT in the public sector (e-Government) so as to develop client-centred e-Government services.

2.2.1 Theories on e-Government adoption

As shown in Table 2.1, e-Government theories borrow heavily from theories established in other domains. They include generic adoption theories (e.g. Rogers, 1995), information system theories (Davis, 1989), IT investment theories (Chircu & Hae-Dong Lee, 2003) and service trust and service quality theories (Tan, Benbasat &

Cenfetelli, 2008). Several reasons account for this situation. First, researchers' backgrounds, philosophical orientations and intentions influence the input and output of their theoretical contributions (e.g. Bagozzi, 2008). Secondly, the limitations of each of the existing theories require complementation from other theories. For example, understanding the limitations of DOI and TAM, Dimitrova and Chen (2006) include user characteristics as key determinants for the adoption of e-Government. They observe that looking at innovations only may result in ignoring important user issues. As a result, their theory includes as well as extends the traditional propositions of DOI and TAM.

The context of application is another aspect that contributes to the variation and emphasis of e-Government adoption. While most of the established theories were developed in the private sector, e-Government deals with the public sector. Scholl (2006) summarizes that the two contexts differ in (1) environmental drivers and constraints, (2) organizational mandates and scope, and (3) internal processes, complexities and incentives. In the public sector, these issues are dominated by political ambition, multistakeholders involvement and deterministic decision-making structures, etc. Consequently, ICT implementation and success require different approaches and strategies. Therefore, researchers merge, synthesize and dismantle various theories in an attempt to fit the context, thus resulting in many and varied theories.

2.2.2 Issues concerning e-Government adoption

Adoption literature presents various theories intended to explain various issues that may influence the adoption of e-Government. The theories range from generic theories to e-Government-specific theories. Inherent to their variance and differences, they present many different issues that may influence the adoption of e-Government initiatives. Our analysis shows that the numerous adoption issues highlighted in the previous studies can be related to issues such as innovations, users, organizations, etc. We will discuss them here and summarize them in Table 2.1 below.

Innovation-related issues

Innovation-related issues encompass factors concerning e-Government innovation. They relate to the system and the content or services intended to be delivered. The

content is the actual service or information that a provider intends to deliver to its users (e.g. tax filling). The system is the channel through which a service is delivered (e.g. a website). Examples of innovation-related issues include ease of use, relative advantage, image, usefulness, privacy and security, and usability in this category (e.g. Tan, Benbasat, Cenfetelli, 2008; Warkentin et al., 2002). Researchers observe that the nature of an innovation influences its uptake by the intended users. In other words, users will be more likely to adopt an innovation when they perceive that it meets their expectations. For instance, a government website that is difficult to use (complex) will attract a limited number of adopters. Likewise, if the contents are not useful enough to meet the recipients' expectations, adoption will be low.

User-related issues

User-related issues refer to issues concerning the recipient targeted by e-Government initiatives. Theories in this category suggest that user issues play an important role in users' decisions to adopt e-Government initiatives (Dimitrova & Chen, 2006; Kamal, 2006). Examples of such issues include user definition (e.g. young/old), aspire (e.g. recognition), expectations (e.g. productivity) and/or possession (e.g. money). In this regard, it can be hypothesized that e-Government innovations that meet users' characteristics will achieve a high adoption rate. For instance, introducing easy to use initiatives may attract adoption of even citizens with few ICT skills. It is also possible to hypothesize that influencing relevant user characteristics may impel users to adopt a new e-Government initiative. Additionally, ICT training may facilitate adoption in contexts where the level of ICT skills is low. In general, it is emphasized that user-related issues must be taken into consideration when deploying initiatives likely to attract citizen adoption.

Provider-related issues

The success of e-Government initiatives is dependent on various factors concerning the provider. These issues are critical, not only for initiating e-Government but also for implementing and evaluating it. This is particularly important because the provision of government in electronic fashion may require procedural or even structural reengineering. Therefore, issues such as authorization, top management support, mindset and organizational politics are mentioned to influence the adoption of e-Government initiatives (Kamal, 2006; Norris & Moon, 2005; Titah & Barki, 2005).

Theories which highlight provider-related issues observe that providers can make a significant contribution to the adoption of their e-Government initiatives. For instance, recipients will be unlikely to adopt initiatives of a provider whose processes and regulations do not favour e-Government. Likewise, initiatives from an organization with a limited top management will not attract many adopters. Consequently, only minimum adoption of the implemented e-Government initiatives will be achieved.

Other issues

Other issues that may influence e-Government adoption have also been identified. One of the issues commonly mentioned is inadequate access. According to the UN (2008), many developing countries do not have an adequate ICT infrastructure. This impedes their citizens to access not only e-Government, but also other electronic services, including e-business. Other issues include cultural ones, such as a preference for face-to-face communication and the importance of external and internal pressure. Additional issues are inadequate contextualization (Bwalya, 2009) and change management (Muganda-Ochara, 2008). Theories in this category illustrate that e-Government adoption can be influenced by a combination of issues. It does not suffice to only focus on people, organization or technology aspects. A high adoption rate of e-Government initiatives can be achieved through a keen understanding of a range of issues that may have impact in a particular context.

In this discussion, we observe that e-Government adoption needs a thorough consideration of multiple issues. The planning and revision of new and existing e-Government initiatives is important. It needs to take into account the complex relationships that exist between different issues, helping governments deploy more adoptable e-Government initiatives.

Table 2-1: Theories and issues in e-Government adoption

	Author	Theory	Issues concerning				
			Intended users	Innovation	Provider (Government)	Other	Context
1	Rogers, 1995	DOI	N/A	Relative advantage, compatibility, complexity, triability, observability	N/A	N/A	Generic innovation Adoption
2	Davis, 1989	TAM	N/A	Perceived ease of use and perceived usefulness	N/A	N/A	Generic technology adoption
3	Parasuraman, 1985	SERVQUAL	N/A	Tangibles, reliability, responsiveness, assurance and empathy	N/A	N/A	Generic service adoption
4	Tan, Benbasat & Cenfetelli, 2008	Trust & quality	Ability, benevolence & integrity	Tangibles, reliability, responsiveness, assurance, empathy, ease of use and usefulness	N/A	N/A	E-Government in America
5	Norris & Moon, 2005	IT adoption literature	N/A	N/A	Innovativeness, capacity and government type	N/A	e-Government in America
6	Titah & Barki, 2005	Conceptual adoption model	N/A	IT characteristics	Managerial practices, organizational and individual characteristics,	Subcultures, measurement of impact	Generic e-Government
7	Warkentin et al., 2002	Conceptual trust adoption	Trust in the e-Government, perceived risk	Perceived usefulness, perceived ease of use	N/A	Culture	Generic e-Government
8	Mofleh & Wanous, 2008	Trust and other user characteristics literature	Trust in the internet, trust in the government	Compatibility	N/A	N/A	Description of e-Government Adoption in Jordan
9	Carter & Belanger, 2005	TAM and DOI, and trust literature	Trust in the internet and trust in the government	Compatibility, relative advantage, image, complexity, perceived ease of use, perceived usefulness,	N/A	N/A	E-Government adoption in America
10	Kumar, et al., 2007	TAM, user characteristics, and quality literature	Perceived risk, perceived control, internet experience	Perceived usefulness, perceived ease of use, service quality	N/A	N/A	Conceptual model
11	Kamal, 2006	Literature review	Collaboration factors	Perceived technology factors	Organizational factors	Support	Generic e-Government adoption
12	Dimitrova & Chen, 2006	DOI, TAM, and user	Demographic	Information channels	N/A	N/A	E-Government in

Table 2-1: Theories and issues in e-Government adoption

	Author	Theory	Issues concerning				
			Intended users	Innovation	Provider (Government)	Other	Context
		Characteristics literature	Characteristics, civic mindedness and psychological factors				America
14	Ebrahim & Irani, 2005	Literature review	IT skills	IT infrastructure, security and privacy	Organizational factors	operational cost	Generic e-Government model
15	Tung & Rieck, 2005	DOI, network externalities, social influence and barriers to adoption literature	N/A	Technological perspective (perceived benefits)	Organizational perspective (management readiness and sensitivity to cost)	external pressure, and social influence	e-Government in Singapore
16	Ndou, 2004	E-Government literature review	N/A	Infrastructure, policy issues, human capital development and lifelong learning, change management, partnership and collaboration, strategy	N/A	N/A	Generic e-Government success model
17	Ho & Ni, 2004	Innovation adoption and extant literature	External pressure, peer influence, resource and capacity factors	Perceived characteristics of e-Government services	Internal political support	N/A	E-Government adoption in America
18	Jaeger, 2003	IS success literature	Citizen awareness and confidence disparities, education	Security, privacy, homeland security, digital divide, economic accessibility, prioritization	N/A	N/A	N/A Generic e-Government success mode
19	Chircu & Hae-Dong Lee, 2003	IT investment	N/A	Value and risk of IT	Investment decision on IT, political mission, power shifting	N/A	
20	Ke & Wei, 2004	Combination of critical success factors, and stage models development literature	N/A	Usability	Top management support, presence of a champion, change management,	Digital divide	

Table 2-1: Theories and issues in e-Government adoption

	Author	Theory	Issues concerning				
			Intended users	Innovation	Provider (Government)	Other	Context
					resources, mindset Changes, strong leadership		
21	Dawes, Pardo & Creswell, 2004	Literature review, public administration, and use of information systems	Characteristics of users	Predictability of use, sensitivity of content, uniformity of information sources, degree of integration among information sources, usefulness of content over time, frame of reference, status of metadata	Extent of data analysis conducted by access provider, nature of data flows, suitability of existing IT, relationship of the access programme to overall organizational mission	Structure of relationships with information suppliers and users, involvement of access provider	E-Government in America
22	Hinnant & Welch, 2002	Adoption literature	Self-efficacy, use, training, education level, work experience, IT activities, IT quality	N/A	IT strategy	N/A	E-Government in America
23	Gilbert, Balestrini & Littleboy, 2004	TAM, DOI and services quality literature	Avoid personal interaction, experience low stress, trust, willingness to use	Perceived relative benefits, visual appeal, information quality	N/A	Cost, time, financial security, perceived barriers	E-Government adoption in the UK

2.3 E-Government adoption in developing countries

The adoption of e-Government in developing countries is of equal importance than in developed countries. A high adoption rate is poised to create value of investing in e-Government initiatives to governments and their customers. In order to achieve this, the nature of e-Government and the context of implementation play fundamental roles. E-Government is a western invention and has been imported into developing countries in different ways. It embodies design and implementation characteristics of its original context (Heeks, 2006). The inherent properties determine its success when implemented in different transfer contexts. It is therefore imperative to understand and approach e-Government with respect to the transfer context. Otherwise, e-Government projects may fail because of a large difference between design and contextual reality (Heeks, 2005).

Following Chen et al. (2006), the differences in context of e-Government between developing and developed countries can be explained. Chen et al. (ibid.) elaborate upon five specific issues that can be used for this differentiation. They include maturity in history and culture, technical staff availability, infrastructure, citizens' issues, and issues related to government leadership (Table 2.2).

The issues highlighted by Chen et al. (2006) can be used to discuss e-Government-adoption situations in developing countries. However, it is important to understand specific areas that these issues affect with regard to the adoption of e-Government. The Economist (2009) presents adoption in view of the extent of utilization of digital channels. Specific indicators of this include (1) the use of the internet by consumers, (2) the use of online public services by citizens, and (3) the use of online public services by businesses. The Economist (ibid.) suggests that the low scores for each of the indicators accrue to a low utilization rate of digital channels. These measures can also be applied to explain and evaluate the adoption of e-Government.

According to Chen et al. (2006), a lack of democratic transparency and limited economic growth (history and culture) may impede the availability of relevant and sufficient e-Government services to the public. Similarly, inadequate competences of government staff, inadequate infrastructure, and lack of adequate experience in ICT

have impact on the utilization of public digital channels. Such issues may limit the deployment of relevant services and channels, and limit access for adequate consumption by the public. In turn, this may hamper consumers to utilize available digital channels and services. Consequently, citizens and the business community face an unconducive environment to adopt digital government channels. This culminates into a low adoption rate of e-Government.

Table 2-2: E-Government Contexts: Developed and Developing Countries

Issue	Developed countries	Developing countries
History and culture	• Government and economy developed early, immediately after independence • Economy growing at a constant rate, productivity increasing, high standard of living • Relatively long history of democracy and more transparent government policy and rule	• Government usually not specifically defined, economy not increasing in productivity • Economy not growing or increasing in productivity; low standard of living • Relatively short history of democracy and less transparent government policy and rule
Technical staff	• Has a current staff, needs to increase technical abilities and hire younger professionals • Has outsourcing abilities and financial resources to outsource, current staff would be able to define requirements for development	• Does not have a staff, or has very limited in-house staff • Does not have local outsourcing abilities and rarely has the financial ability to outsource, current staff may be unable to define specific requirements
Infrastructure	• Good current infrastructure • High internet access for employees and citizens	• Bad current infrastructure • Low internet access for employees and citizens
Citizens	• High internet access and computer literacy, still has digital divide and privacy issues • Relatively more experienced in democratic system and more actively participating in governmental policy-making process	• Low internet access and citizens are reluctant to trust online services, few citizens know how to operate computers • Relatively less experienced in democratic system and less active participation in governmental policy-making process
Government officers	• Decent computer literacy and dedication of resources, many do not give e-Government high priority	• Low computer literacy and dedication of resources, many do not give e-Government a high priority due to a lack of knowledge

Source: Chen et al., 2006

The above discussion characterizing the adoption situation of e-Government developing countries has also been observed by other authors. The situation specifically applies to the low-income category countries (1.2). For instance, Bwalya (2009) reports that e-Government adoption in Zambia is impeded by inadequacy of the ICT infrastructure and political will, and a lack of language localization. Additionally, the lack of proper change-management procedures and the lack of contextualized e-Government practises are also important. In Kenya, disaggregated projects and the weak mobilization of e-Government projects play an important role (Muganda-Ochara & van Belle, 2008). Ngulube (2007) posits that sub-Saharan Africa has the major

ingredients for a low e-Government adoption rate. We can therefore observe that e-Government adoption is challenged by many issues. Therefore, governments and other developing partners must gain an understanding of the contextual issues for deploying initiatives that the public is likely to adopt.

2.4 Enhancing e-Government adoption: the paradox

The existing generic and specific adoption theories highlight different dimensions that may influence adoption. A common adoption of information systems is a function of various factors. The significance of the factors may vary in importance when observed in different contexts (Bwalya, 2009). Accordingly, to Information Systems (IS) practitioners, the theories present a paradox of the determinants of adoption. For instance, DOI was developed to explain the adoption of job performance innovations; therefore, it may be limited to explain consumer adoption. On the other hand, frequent TAM extension and refinement (Davis, Bagozi & Warshaw, 1989; Venkatesh, 2003) indicate its incompleteness. Furthermore, other studies (e.g. Chau & Hu, 2002; Kijsanayotin, Pannarunothai & Speedie, 2009) have found evidence that prominent theories such as TAM and UTAUT may not be able to explain adoption in all contexts. In addition, domestication theories present a myriad of possible adoption determinants. Therefore, it is evident that, in practice, IS practitioners are still inadequately facilitated when designing and implementing new ICT innovations for their businesses.

Existing theories provide useful insights into e-Government adoption. However, they manifest similar limitations inherited from the generic theories presented above. In other words, they also emphasize and predict different and varied determinants of e-Government adoption. For instance, Jeyaraj, Rottman & Lacity (2006) and Sabherwal, Jeyaraj, & Chowa (2006) identify respectively 45 and 121 different empirical adoption studies. In addition, Kamal (2006) presents a list of 40 issues that may influence e-Government adoption. Consequently, governments and e-Government practitioners are left in a trial-and-error situation on how to approach e-Government adoption. This may lead to a lack of prioritization and contextualization when designing and implementing e-Government initiatives. Such a situation may result into the deployment of initiatives that are less likely to be adopted by stakeholders, hence increasing the chance of failure of the initiatives.

2.4.1 Need for a new approach

The preceding discussion shows that adoption is an important aspect in the success of e-Government initiatives. Inadequate adoption may lead to the failure of e-Government initiatives. However, in developing countries, successful adoption is challenged by issues such as the lack of infrastructure and other social and technical issues. Sometimes, governments are caught in the dilemma of general ICT connectivity in their countries and e-Government initiatives. This may cause a vague focus on whether a government is providing e-Government or generic ICT initiatives for a country. In addition, the multitude of adoption theories and factors presents a perplexing situation to e-Government implementers. Interestingly, there is no guidance on how governments should consider and prioritize issues that may lead to a high adoption rate of their e-Government initiatives. This suggests that e-Government initiatives are implemented with little knowledge on their adoption.

The above situation presents the need for a new approach to ensure and enhance the adoptability of new and existing e-Government initiatives. We observe two key problems. First, with regard to the status quo, it is difficult for governments to proactively design and predict adoption of their e-Government initiatives. Secondly, from the adoption perspective, it is also not possible to conduct an objective postimplementation evaluation of the success or failure of e-Government initiatives. The main reason for this is that there are no frameworks that can provide assistance during the inception, design, deployment or evaluation of e-Government initiatives. Such a toolset is important to provide a hinge and yardsticks to predict and evaluate the adoptability of e-Government initiatives.

We observe the importance of enhancing citizen adoption of e-Government initiatives. Deploying citizen-adoptable e-Government initiatives in a developing country context is not automatic. It requires effective decision-making during inception, design and deployment. It also needs a well-guided evaluation of the initiatives. However, we noticed that two questions have remained unanswered. (1) *What priority issues need to be considered to enhance the adoption of e-Government initiatives in developing countries?* (2) *How can these priority issues be addressed?* Based on these questions, we highlight the reason for this study. We argue that there is an urgent need to provide a way to facilitate identifying important adoption issues and possible ways of approaching them.

In this way, governments, particularly in low-income developing countries, will reduce the risk of failure, while boosting the opportunities of their e-Government initiatives. For such countries, the success of e-Government initiatives has dual values. First, it will ensure that citizens are served better by their governments. Secondly, the savings resulting from efficiency and effectiveness of e-Government may contribute to acceleration of the political, infrastructural, economic and social development of developing countries.

This research differs from the majority of existing adoption studies in several ways. First, we adhere to the design-science perspective (1.9.1). In this approach, we will intend to first understand the underlying contextual issues and then develop a fitting solution. Unlike the majority of the previous studies, this extends our research beyond the mere identification of adoption factors. Instead, we will identify contextually relevant adoption issues and then provide a solution on how these can be approached and manipulated. Secondly, in this study, we will approach e-Government adoption from the perspective of low-income developing countries. In this way, we contribute to bridging the existing theoretical gap in the adoption knowledge concerning that context. The identification of contextual issues will enrich the existing knowledge of e-Government adoption.

2.5 Summary

In this chapter, we presented and redefined the concept of technology adoption and its reflection in the IS adoption context. We discussed various adoption theories and their relevance to the adoption of e-Government. Furthermore, we looked at the applicability of the current theories in a developing country context. We acknowledged that the current theories are useful. However, due to existing contextual differences, the theories may be limited in explaining adoption in different environments. Currently, the literature does not provide guidance in the process that may lead to a high adoption rate of e-Government in developing countries. For developing countries, particularly the low-income economies, this is an alarming situation. It is important to provide a way of facilitating the inception, design and deployment, and evaluation of e-Government initiatives. In chapter 3, we will present how we approached this objective.

Chapter 3
Exploring e-Government adoption in Tanzania

In this chapter we present the process and results of the initiation phase of this research. In the initiation phase we wanted to scan our research context to gain an initial understanding concerning possible adoption constructs. We focused at identifying currently available citizen-focused e-Government initiatives and channels of delivery. Further, we sought to explore factors to determine citizen adoption of e-Government in Tanzania. We later related the identified issues with existing theoretical propositions. We also discuss our findings concerning existing citizen-focused e-Government initiatives, and the current adoption situation. Finally, we discuss emerged initial concepts concerning e-Government adoption in Tanzania.

3.1 Introduction

In chapter 1 and 2 we presented a theoretical analysis concerning the adoption concept and e-Government adoption. We highlighted the social-economic value of e-Government, particularly in developing countries. We further looked at the relevance of the existing theories to facilitate the implementation of citizen-adoptable e-Government initiatives in developing countries. We noted that currently limited guidance is available on how developing countries can deploy initiatives that are more likely to be adopted by citizens. This is specifically so in the low-income developing countries (1.2). We also highlighted that, if this situation will remain unaddressed, e-Government initiatives will continue to fail as noted by Heeks (2002).

In this chapter we present activities and results of the initiation phase of our study (1.9.2). Activities in this phase are aimed at informing us on the current e-Government business environment in Tanzania. The resulting understanding provided us with a lens with which we can study the actual e-Government adoption problem in the country. This is a prerequisite for designing and introducing an appropriate solution to a particular business problem (Hevner, 2007). Specifically, we sought to understand the currently available e-Government services intended to citizens in Tanzania and establish the extent of adoption of the initiatives. Further, we explored various issues possible to explain the observed situation. The resulting understanding provided us with initial constructs concerning e-Government adoption in Tanzania. The constructs helped us to

focus on identifying potential issues influencing citizen adoption of e-Government Initiatives in Tanzania. The issues will be studied further (Chapter 4) to establish specific areas in defining and formulating requirements for our envisaged solution.

3.2 Method

As we noted above, in this phase we wanted to define a lens to help us study the e-Government problem in Tanzania. The lens would provide us with initial constructs to guide our enquiry. Accordingly, we needed to choose an appropriate approach to facilitate this objective. We considered several issues in our choice. Firstly, we considered the nature of our main research question (1.7) and the specific questions we wanted to answer in this stage (1.7.2 and 1.7.3). The questions are exploratory in nature. Accordingly, we needed an approach that will guide us to conduct an exploratory study. Secondly, we considered the status of the current adoption theories to explain adoption of e-Government in Tanzania. We observed that the theories are diverse as well as their proposed factors. It was therefore challenging to adopt or combine all theories to study adoption situations in Tanzania. Consequently, it was difficult to choose a theory that would be the most appropriate for studying adoption of e-Government initiatives in Tanzania. Thirdly, we anticipated encountering data availability challenges, especially citizens' evaluation of government information systems. This is because e-Government and e-Government adoption studies from citizens' perspective are still new in Tanzania.

In respect of the above, we found that Grounded Theory Approach - GTA (Strauss & Corbin, 1990) fits well with the nature and the objective of our study. GTA helps a researcher to inductively explore the context, and then deduce meaningful findings from raw data. In GTA, a researcher interprets and makes sense of data to identify important insights as they describe a particular phenomenon. The findings can then be refined into a substantive theory to explain the situation under observation. The grounded theory approach involves steps such as open, focused, axial, and selective coding (ibid). It also utilizes tools such as memo writing and theoretical comparisons (Charmaz, 2006). Such tools assist a researcher to gather, interpret, and relate concepts from raw data.

In this research, GTA provided us with a relevant way exploring and making sense of the adoption issues in Tanzania. It allowed us to establish and understand the relationship between citizens' adoption of e-Government initiatives with multiple factors. It was also possible to flexibly overcome the above mentioned challenges as we progressed with our inquiry.

3.2.1 Data sources and data collection procedures

In this phase we needed information regarding e-Government adoption situation in Tanzania. Specifically, we needed information concerning existing initiatives, channels used for e-Government, and issues potential to explain the adoption situation in the country. Accordingly, we consulted various data sources to elicit the information we needed. These include ICT experts, mainly from the government, and potential ordinary users and non-users. Observations in government meetings, and insights from government documents were also collected.

We consulted the ICT experts to understand the available e-Government initiatives, and the key issues they have experienced or perceived that influence citizens to adopt e-Government. We also sought similar information from ordinary users. In this study, we considered ordinary users to be respondents who are not ICT experts; hence, not involved in the implementation of e-Government in the country. This group was specifically selected to provide experiences from a non-ICT expert perspective. Observations in government organized meetings were done to spot new issues, relate them to already identified ones, and clarify whenever possible. Government documents provided us with historical account of e-Government and possible adoption related issues.

Interviews and focus group discussions (FGDs) were used to collect opinions and experiences from both experts and ordinary users concerning e-Government. Field observations were made during researcher's participation in government e-Government meetings, and one site visit[3]. Various documents such as policies and reports were also collected from government offices. Interviews were useful for capturing personal account of the respondents, while FGD were instrumental revealing, discussing, and clarifying new issues and doubts.

We collected data from three Regions in Tanzania; Dar es Salaam, Morogoro, and Zanzibar. Dar es Salaam was selected because it is the main business city of Tanzania, while Morogoro was selected to represent other regions in Tanzania with less business activities as compared to Dar es Salaam. Zanzibar was selected because it represents the other side of the United Republic of Tanzania (URT)[4].

3.2.2 Respondent profile

From the ICT expert category, we separately interviewed 19 respondents, while 14 respondents participated in two different FGDs. In the ordinary user category 24 respondents were separately interviewed, while 44 more participated in six different FGDs. This summary is given in Table 3-1 below and appendix 10.A.

Table 3-1: Respondents Profiles

Category	Number of respondents	Percentage
Government ICT Experts Interviews	19	18.8
Government ICT Experts Focus Group	14	13.9
Ordinary User Focus groups	44	43.6
Ordinary User Interviews	24	23.8
Total Participants	**101**	**100**

3.2.3 Data capturing procedures

Interview handling

Interviews administered to ICT experts and ordinary users were arranged after identification and contacting the respondents. They were arranged to take place at respondents' most convenient locations. We used semi-structured interview guides to facilitate the flow, while a microphone attached to a laptop computer was used to record the conversations. All interviews from this group were recorded in this way, except for two conversations where respondents preferred not to be recorded. The interviews were transcribed, and prepared for analysis. The average interview duration was 80 minutes.

During the point-of-access interviews respondents were contacted in their offices or in internet cafés. We asked the respondents if they could respond to a few questions, and

[3] Visit at the Ministry of Lands and Human Settlements
[4] Tanganyika and Zanzibar united in 1961 and formed URT

upon their consent, we used an interview guide (Appendix 3.A) to facilitate the flow of interviews. The average interview duration was between 15 to 25 minutes. Because of the nature of this type of interview, we did not record them. However, we made a summary of each interview and emailed this to the respondents for verification. This helped us to clear and confirm our understanding concerning issues we noticed from their responses.

Focus group discussion handling

At the beginning of each FGD we introduced participants to the research topic, aim, and information required from them. Participants were then divided into two smaller discussion groups, and given between 30 to 40 minutes for discussion. An FGD guide (Appendix 4.A) was also provided to the groups to facilitate their discussion. A joint group discussion was then convened, and each group was asked to present their observations for discussion. This approach not only allowed participants to actively participate in the discussion, but it also facilitated thorough discussion and constant probing. The average duration for the focus group discussion was 120 minutes.

Observations handling

We participated in two high profile e-Government meetings organised by the Presidents Office Public Service Management Department (PoPSM), and made one site visit at the Ministry of Lands and Human Settlements (MoLHS). The first government meeting was organised to discuss e-Government implementation progress in Tanzania, while the other meeting was organised to brainstorm the development of e-Government strategy in Tanzania. An observation form (Appendix 6.A) was used to capture issues emerged relevant to this research. Additionally, we analysed all documents collected during and after these meetings using a prepared document analysis form (Appendix 5.A).

Quality control

Apart from triangulation (interviews, FGDs, and observations), as used in this study, additional measures were used to improve the, quality and reliability of data in this study. These included providing an evaluation form (Appendix 8.A) after each interview and focus group discussions, and sending a summary of the interview and FDG to respondents for verification. This strategy was useful for fine-tuning the data elicitation

process, data verification, and highlighting possible areas that may be of future interest.

Data analysis

Using Straus and Corbin's (1990) framework of data analysis, we analysed data through open, axial, and focused coding. The process was facilitated by means of qualitative data analysis software, *Atlas.ti*. We used the software to manage data, code, analyse, and relate the emerging themes. This provided us with a flexible way of comparing concepts and their relationship to citizen adoption of e-Government initiatives.

Presentation of results

We link our results to data through codes, quotes, and/or field notes. Appendix 1.A enlists the codes, while quotes are organised in appendix 1.AA. However, whenever possible quotes are provided in the text. Quotes are indicated as QXY where Q stands for quote, C denotes a latter for a particular issue[5] and Y for quote number. For instance QIN1 denotes a quote number 1 in the infrastructure category. Likewise, a field note extract is denoted as FNY where FN stands for field note and Y for a field note number. To preserve the confidentiality of our respondents, we denote the respondents as R.Y where R stands for respondent and Y for number we assigned to a particular respondent (e.g. R.5 represents respondent number 5).

3.3 Results

3.3.1 Citizen-focused e-Government initiatives

We first wanted to understand existing citizen-focused e-Government initiatives. We therefore enquired concerning electronic services that the government has implemented to be used by citizens. We identified three categories of citizen-focused e-Government related initiatives. They include the internet based initiatives, radio and television, and mobile phone based initiative. However, little information was available on the use of mobile phone enabled initiatives. Only one initiative was available in this category. This is because it was run by a private company with an intention of providing

[5] P = Perceived organizational preparedness; C = Citizen preparedness, S = Services intrinsic issues; IN = Infrastructure issues

examination results from the National Examinations Council of Tanzania (NECTA). We therefore focused our attention on the internet, radio, and television based initiatives.

Thirty (30) government websites accessible to citizens were identified during this study (Appendix 11.A). The websites were evaluated using the World Bank's e-Government maturity model (InfoDev, 2002) to identify available services and general maturity stage. The result shows that the websites evolution stage is between publish and interactive stages. No transactional stage services had been implemented during this analysis. Similar findings had also been reported by Mutagahywa, Kinyeki, and Ulanga (2007). We learned that the websites mainly provide information about government Ministries, Departments and Agencies (MDAs) and their activities. Additional services include downloadable forms, policies, speeches, laws, and few searchable databases. Table 3-2 show that emails and downloadable documents were available in most of the websites. In addition, 5 websites had online forms, 8 had downloadable forms, while searchable databases were available in only 2 websites.

Table 3-2: Evaluation of Government Websites and their Services

Category	Number of websites	Percentage
E-mail	29	96.67
Documents	21	70.00
Offline forms	8	26.67
Online forms	5	16.67
Searchable database	2	6.67

Although the government uses TVs and radio to provide information to citizens, no intentional national level plan was cited on using these channels. The channels are used to provide educational programmes, special announcements, and broadcast parliament sessions by individual government organization. Whenever appropriate, the government uses the channels to inform other occasional events it wants the public to know. In this category, we identified one interactive programme on National Television, and Radio Tanzania[6]. The programme allows interactivity by combining TV, radio, and phones technologies. In that programme a senior government official (s) presents issues about his/her office. Then citizens are allowed to call to ask questions and/or present their concerns in a real-time manner. This observation is clarified more by a government official from POPSM.

[6] TvT and Radio Tanzania were merged in 2007 into Tanzania Broadcasting Corporation (TBC)

"Different MDAs use Televisions and radios differently. But all I can say is that there are some programmes which the government pay these stations to broadcast. When there are special events, they are always called to capture the events so that they can inform the public what is going on. However, I am not sure if there is any intentional strategy of reaching citizens. Our office has one programme on TVs on reform programme. I also know that TVT has one session called "Tuambie" (Tell us). The session is mainly meant for inviting government officials, present issues from their offices, and asked questions by the public through phones" R.52

3.3.2 Degree of e-Government adoption

We wanted to understand the general level of adoption of the available e-Government services. The understanding was important because it would provide us with context specific e-Government adoption situation. According to Rogers (2003, p.221) the rate of adoption is the '*relative speed with which an innovation is adopted by members of a social system*'. Rogers perceives that the number of adopters can be obtained to explain the rate of adoption. In this study we learned that quantified numbers of e-Government adopters may not explain the actual citizen adoption. This is because, in settings such as Tanzania, many people use intermediaries e.g. cybercafé attendants, relatives, and friends, to get access and use the government websites. Therefore, it may not be possible to obtain the actual number of adopters of an e-Government initiative.

In this study we opted for a more elaborate explanation. We embrace the *degree* (*extent) of adoption* rather than *rate (speed) of adoption*. This helps us to explain adoption regardless of whether numeric value of actual users is obtained or not. This understanding is necessary especially when evaluating adoption of digital channels in low-income developing countries. We define citizen adoption of e-Government as the extent to which citizens accept, and internalize the use Government electronic initiatives. This can be direct adoption or indirect adoption. Direct adoption happens when citizens opt for, access, and utilize e-Government initiatives in person. This kind of adoption can be estimated by measuring the number of initiative users by means such as web hits.

Indirect adoption happens when citizens accept and utilize e-Government initiatives through intermediaries. Indirect adoption can be estimated by the extent to which an initiative benefits its intended users. For instance, during the announcement of examination results, students request their results from a number of intermediaries who have access to the National Examinations Council of Tanzania's website. This can be

cybercafé operators, relatives, teachers, and/or friends. In such a case a person may be accessing the website on behalf of a number of people such that they do not need to personally and physically access the website. While they do not directly access the website as in the case of direct adoption, they still rely and benefit on the website for the information they need.

3.3.3 Emerging adoption issues

In this phase we present our interpretation of the key issues underlying the citizen adoption of e-Government initiatives. The categories are the result of grouping and relating various data classes following data collection, coding, and analysis processes (3.2.3; and Appendices 1.A and 1.AA). This process involved analysing textual data and assigning open codes. Related codes were then grouped into related sub-categories. Finally, the related subcategories were grouped into a higher level overarching adoption issue. In Table 3-3 we present a summary of the coding process towards citizen preparedness issues.

Table 3-3: Sample coding process for Citizen Preparedness

Code No.	Open code	Axial coding (Sub category)	Focused coding (Issue)
C1	Awareness of existing services	Need for awareness of existing services	**Citizens Preparedness**
C2	Awareness strategy		<**Sample memo:** ...Citizens are hindered from adopting e-Government because they are have limited awareness of what is available; they have inadequate ICT skills to operate computers, but also are economically disadvantaged to buy or pay for electronic services. It also seems that people like to communicate face to face rather than using modem means. This issue indicates inadequate preparedness of the citizens to participate in electronic contact with the government...>
C3	Awareness of e-Government		
C4	Knowing what you need		
C15	Attitude towards automation	Need for ICT Skills	
C16	Attitude towards ICT		
C17	Availability of IT skills in Government		
C31	Culture concern	Preference for face to face	
C32	National culture		
C33	Oral tradition		
C34	Preferring/trusting the face to face communication		
C35	Resistance to change		
C36	Affordability	Affording to pay for	
C37	Low Economic power		
C38	Removing Tax on ICT equipment		

From the analysis, four main issues emerged to determine citizen adoption of e-Government initiatives in Tanzania. They are (1) preparedness of government, (2) preparedness of the citizens, (3) adequacy of the access-facilitating infrastructure, and (4) perceived service intrinsic factors. We present them mainly as they influence

adoption of e-Government initiatives rather than how they influence each other. We present each of these issues in the following sections.

Government preparedness

Government preparedness emerged as a result of respondents' evaluations concerning the current readiness of the government to participate in digital business. Perceived government preparedness refers to citizens' apprehension of the extent to which the government appears to be prepared to serve them in electronic fashion. It explains citizens' adoption attitudes concerning the preparedness of the government; e-Government initiative owner/provider. This issue suggests that citizens will be attracted to adopt e-Government initiatives when they perceive that the government is adequately prepared to serve them electronically. Precisely, when there is low perceived government preparedness, e-Government adoption will also be low. This suggests that the government (e-Government initiative owner) needs to demonstrate convincing preparedness to attract high citizen adoption of its electronic initiatives. The government needs to appear to the citizens that it is actively and deliberately prepared to serve them electronically. Citizens need to perceive that the government can adequately provide, handle services, and respond to their enquiries in an electronic environment. Otherwise, they will be likely to opt for traditional ways of contacting the government.

Several categories contribute to this issue. As shown in Table 3-4, the categories include adequacy of administrative buy-in, and presence of supportive policies, guidelines, processes, and practises. In addition, the presence of visible coordination mechanism of e-Government initiatives contributes to this category.

Administrative buy-in refers to the perceived support and thrust exerted by senior government officials to implement and accept e-Government and its practises (QP1). This category suggests that actions of senior government officials play an important role in influencing citizens' e-Government adoption decisions. Citizens observe actions of government officials concerning electronic initiatives. Citizens' conviction and confidence to adopt e-Government grows with the perception that government officials own and pushes the idea. In contrary, their adoption likelihood decreases with low buy-in. When there is high and deliberate government administrative buy-in officials will

talk-about, practise, and advocate e-Government. As a result, citizens will perceive that the government is resolute to work in electronic environment. This will raise the awareness and confidence of the citizens not only to accept and use the initiatives, but also to demand them.

Table 3-4: Government Preparedness

Category	Codes	Quote	Observation
Administrative buy-in	P1-19	QP1	Limited support from government officials indicate that the government is not well prepared to provide its services electronically
Coordination mechanism	P31-35	QP2	Lack of coordination points to unpreparedness of the Government. This results into disfranchised initiatives. in turn, it discourage people from adopting electronic services
Adequacy of policies, guidelines and standards	P22-30	QP3	Inadequate policies and guidelines are necessary to implementation and adoption of electronic environment.
Adequacy of government practises, processes, and procedure	P13-21	QP4	Current processes need to be re-engineered to provide adequate environment for digital working

We identified that inadequate administrative buy-in was another important category for citizens to adopt e-Government initiatives in Tanzania. Although there are some measures that indicate government commitment on e-Government (e.g. NICTP, PSRP II, Microsoft MOU), they are not visible to citizens. We also noticed that limited intentional efforts and willingness was present as at individual government institutions level. For example, e-Government implementation has received lesser senior management advocacy compared to other country-wide and cross-cutting initiatives such as AIDS control projects. Presently, e-Government had not been advertised, talked-about, formalised, or even institutionalised as compared to the AIDS control movement. Accordingly, citizens perceive that the government is less deliberate on e-Government.

Inadequacy of supportive laws, policies, guidelines, and strategies is another issue which emerged (QP3 & 4). This issue is important because the government operates under established laws, policies, guidelines, and standing orders. Citizens will be unlikely to seek and/or receive government electronic services if they observe that e-Government processes are not formalised and/or legalised. The presence of the supportive laws, policies, guidelines, and strategies facilitate and define what should be implemented when. They also define the roles, procedures, and legal accountability

of the government. This advances citizens' confidence to accepting and using government electronic services.

Currently few government organizations have attempted to develop at least their ICT policies. We were able to cite only two organizations to have formalised their ICT policies. These are the ministry of Lands, Housing and Human Settlements Development, and the Ministry of Education and Vocational Training (URT, 2007). At the national level National Information and Communication Technology Policy (URT, 2003) is the only available intentional policy, though with no implementation strategy. The only law that was found to support electronic practise is the Written Law (Miscellaneous amendments) Act 2007. However, this law does not address government electronic operations.

We observed that the current government procedures and practises are not ready for electronic business activities (QP5). For instance while there are known procedures for updating government or institutional newsletters (e.g. University news latter) there is no procedure on updating electronic publications displayed through websites. In addition, while it is known on how paper based letters should be handled, considered and responded to. However, it is yet uncommon to respond to electronic requests such as emails. As a typical case one respondent from the UNDP says:

> *"Let me give you a good example, just yesterday I am organising a workshop for this weekend, and we try to get somebody from the Prime Minister's office. After my colleague has discussed everything, he ended by saying "will you please write, not electronically, write and deliver to my office so that I can process it". But I thought since we have spoken on the phone and there is an email for that it is the end of it, but the guy wanted a formally written letter to be delivered so he can get his boss to act on it, because they want approval of something written on it" R.15.*

Other common unsupportive government practises identified are lack of user involvement, and lack of publicity behaviour (QP5). It is uncommon for the government to involve citizens when developing its electronic services intended for them. It is not surprising therefore that the initiatives are not prepared to process, record, and promptly respond to citizens concerns. This suggests that the government has been deploying initiatives with less understanding of what citizens want. Additionally the government rarely advertises its electronically available services. We noted that the services are mainly communicated during public fair event (e.g. Civil servant week and

Sabasaba International Trade Fair). This not only contributes to low citizen awareness, but also sends a signal of low seriousness and preparedness towards e-Government.

> *"People are not well informed. Look at what is happening in the private sectors. They inform their customers through various channels such as TV, Radio, flyers, tyre covers etc. But the government does things and keeps quiet. How will the people know?" R.6*

Inadequate government preparedness through lack of coordination is another noticed issue (QP6). Currently the coordination of e-Government initiatives is mandated to the Presidents' Office Public Service Management (PoPSM) department. The department had been facilitating e-Government initiatives through funding and training. Activities involving guiding and regulating e-Government initiatives were yet to be implemented. As a result limited coordination of e-Government initiatives is available in Tanzania. This has resulted into low value, and fragmented initiatives as each government institution attempts to implement its own e-service. This observation is congruent to various proposals submitted to the government by different stakeholders (e.g. Miller, 2007; Mutagahywa, Kinyeki, & Ulanga, 2007).

Coordination is important for the steering of e-Government activities. With good coordination administrative buy-in can be sought, and policies and procedures can be identified and reviewed. Also standards, plans, and strategic advocacy and publicity of e-Government initiatives can be accomplished. Visible to citizens, this demonstrates the degree of determination and commitment that the government has on e-Government. In turn, it contributes to their confidence that the government is prepared to serve them in electronic fashion.

The coordination situation in Tanzania indicates an important insight to the e-Government situation in Tanzania. It provides us with important actors of e-Government. We observed that while PoPSM is expected to coordinate e-Government, the main implementers are the individual government institutions. These organization have their budgetary votes, hence, e-Government initiatives are incepted, developed, and deployed by individual organizations. Citizens and businesses are the main targeted consumers of e-Government initiatives.

Citizen preparedness

Citizen preparedness encompasses issues related to the intended users of e-Government; in this case the citizens (Table 3-5). This issue suggests that citizen preparedness status determine their likelihood of adopting e-Government initiatives. Precisely, inadequately prepared citizens, will have limited chances of adopting e-Government. Specific categories contributing to citizen preparedness include awareness of the existing e-Government initiatives and the associated benefits, and the adequacy of the skills required to operate access equipment especially computers. Others are economic power, and preference for face-to-face communication.

Table 3-5: Evidence for Perceived Citizen Preparedness

Category	Codes	Quote	Observation
Awareness of existing services	C1-14	QC1	The majority of the citizens are not aware of the existing government electronic services, and the benefits of using them Low awareness contributes to low adoption.
ICT skills	C15-30	QC2	Many citizens, particularly in the rural areas have low level or no ICT (computer) skills. Low ICT skills impede citizens confidence to seek and utilize government digital initiatives; hence low adoption
Preference for face-to-face	C31-35	QC3	People prefer face-to-face contact between themselves and with institutions including the government. In the early stages of e-Government this can impact their willingness to adopt
Affording to pay-for	C36-29	QC4	The economic situation of the people limits them from accessing electronic environment. this can also include e-Government

Citizen awareness of existence and benefits of e-Government initiatives contributes to their preparedness for e-Government (QC1). Less aware citizens will not seek for and use government electronic initiatives. This leads into a low adoption situation. We noticed that, although the government is deploying initiatives such as websites, the awareness of citizens concerning the existence of such initiatives is low. Citizens, especially those in the rural areas, are yet to know the benefits of using such initiatives (Miller, 2007; Mutagahywa, Kinyeki, Ulanga, 2007). This situation may have been caused by the newness of e-Government in Tanzania, and the lack of adequate publicity practices in the government. Lack of awareness contributes to inadequate preparedness, and hence low adoption of e-Government initiatives in Tanzania. The response below explains this observation.

"The danger I see is that we may create very good e-Government, we can create very good database of government information, but people can not be able to use it, because they do not know that this one exists. Because at this moment we have many websites, but who know that these websites exist?" R.7

The level of citizens' ICT skills contributes to their preparedness towards e-Government (QC2). The skills relate to citizens' ability to operate ICT equipment, especially computers. Inadequacy of skills to operate computers was more significant in the rural areas where most of the Tanzanians live. Citizens with limited ICT skills (e.g. using computers) may demonstrate fear to engage on utilising electronically delivered services. They therefore have low preparedness to adopt electronically delivered services. In the government sector, this jeopardizes their preparedness and possibility of adopting e-Government initiatives.

We also observed that most of the people preferred face-to-face communication (QC3). It is common to find groups of people around and in government offices wanting to meet government officials. This is so even when the required information is already available on government websites (e.g. examination results). One government official told us that:

"…many people prefer face-to-face communication. They want to see that they have seen someone responsible for their problems. They feel that they have contacted a real person. With technology, that is not possible. Therefore they will prefer to physically go to a government office to get a service they want" (R. 26)

Preference for face-to-face communication was another category contributing to citizen preparedness for e-Government. This issue suggest that citizens with high preference for face-to-face communication will have low possibility of e-Government adoption. This issue is contextual and was expected for two reasons. First, Tanzania was a socialist country. The country heeded and promoted *"Ujamaa"* (family hood) officially since 1967 (Kamat, 2008). Under *Ujamaa* people were encouraged to live, work, and help each other as a family. This has practically brought Tanzanians together as one society. This social-political effect may have contributed to the society's inertia to adopt self-service offerings including e-Government. Secondly, presently, most of the e-Government services are delivered through the internet. However, the internet and its derived services (e-Government and e-commerce) are still new in the country. Accordingly, the society is still used to traditional face-to-face communication as compared to internet delivered services or other kinds of self-service services.

The economic power of most Tanzanians is another factor that may explain citizen preparedness for e-Government initiatives adoption (QC4). We observed that when citizens have low economic power to afford the access cost, adoption level will also be low. During this research we visited few computer shops in Dar es Salaam to find out the price of used and new computers. We found that the price of a used computer ranges between USD 200 and 500[7]. In addition, a brand new computer price was between USD 700 and 2000 depending on the specification. On the other hand the initial cost of internet connection at home (modems and other gadgets) ranged between USD 150 and 300. Monthly subscription was between 45 and 65 depending on the provider (e.g. TTCL, Benson, Zantel, etc) and the base of the contract.

We also visited cybercafés in Dar es Salaam, Morogoro, and Zanzibar to establish related access costs. We found that access cost was about TZS 500 (USD 0.5) per 30 and 45 minutes access session respectively. However, the cost may increase with respect to the internet speed, and travel cost if a user comes from a distant location.

According to the World Bank (2009), the GDP per capita in Tanzania was $ 400. This suggests that citizens may not have sufficient savings to afford computer and internet delivered e-Government. On average, costs related to computer acquisition, internet connectivity, or even cybercafés accessing are high for the majority of Tanzanian citizens. This contributes to their low preparedness to adopt e-Government initiatives. One of our respondents explains this situation:

> *"Our priority is not on ICT. People need food, clothes, shelter even before gong to ICT people need their children to be educated" (R.3) "… computers are expensive; people can not be able to buy the computers. So if you are not in the office, or in the internet café, where are you going to get the computers? You have to have a computer at home. But it is not easy for people to have a computer at home. Even middle income earners, can not afford it" (R.7).*

Service intrinsic issues

This category emerged as a result of grouping and interpreting data pointing to e-Government services (s) provided to citizens. This category highlights that perceived attributes of an e-Government initiative will determine its adoption by the citizens. An e-Government initiative with attributes which do not meet user expectations or situation

[7] Prices as at december, 2007

will attract less adoption. That is, high adoption will be achieved if the perceived attributes of an e-Government initiative meet or exceed user expectations. We noticed two important issues in this category. These include the quality of service (ease of use, usefulness, and correctness), and the fit in the union structure of the country (Table 3-6).

Table 3-6: Service Intrinsic Issues

Category	Codes	Quote	Observation
Service quality	S1-31	QS1	The general quality of the provided service is unsatisfactory. Characteristics such as insufficiency, incompleteness, obsolesce disjointedness discourage citizens from utilising available digital contents
		QS2	Poor system (website) design contributes to perceived poor service quality. This may result in to dissatisfaction and rejection of government digital services
Fit in the union	U1-2	QFN1	Digital services by the Union government (URT) will attract more users as compared to those by the Zanzibar government. The current adoption level is mainly of the URTs websites

The quality of service was seen to be an important issue. This category suggests that citizen perception of the quality of an e-Government service will determine their adoption decisions. An e-Government initiative with modest to high perceived quality is likely to attract more citizens to adopt. On the other hand, perceived low quality will jeopardize citizens' willingness to adopt e-Government initiatives. In Tanzania we noticed concerns regarding the quality of the current e-Government websites (QS1). Specific issues include the quality of content of the service (up-to-datedness, objectivity, sufficiency and authenticity), and reliability (sustainability) of the services (S1-31).

During this study, e-Government in Tanzania was mainly at the informational stage. Accordingly, our respondents indicated their dissatisfaction on the quality of government websites. An interesting case was on the contribution English language against ease of use. While many Tanzanians speak Kiswahili, almost all of the websites we visited were written in English. Only few had some traces of Kiswahili. Further evaluation of the 30 government websites found that the websites are not easy to use because they are not integrated to *'talk'* to each other. For instance, it is not easy for one to obtain information from other government websites when using the national website or the parliament website.

"… if you go to the government websites now, apart from the statistics which are not updated, from the census, … the most current thing you normally see is the speeches of president or ministers… The other information you see today will be the same tomorrow it is not updated, it is unfortunate" R.16.

We also noticed that the current government arrangement in Tanzania plays a significant role on e-Government adoption. The government of the United Republic of Tanzania is a unitary government. The union arrangement between Tanganyika and Zanzibar in 1964 dissolved the then Tanganyika government. However, the Revolutionary Government of Zanzibar (RGZ) government was retained. The Government of the United Republic of Tanzania (GoT) was created to oversee Tanzania mainland affairs and some agreed union matters. The RGZ has autonomy over Zanzibar affaires. As a result citizens in Tanzania mainland have a direct contact and attachment (affinity) to GoT, and limited affinity to RGZ. Zanzibar citizens have direct access, contact, and affinity to both governments.

We perceive that in such a situation e-Government services which will fit the Tanzania Union structure will attract more adopters than those which do not (SFN1). Specifically, services which will be provided by the GoT will attract more adopters as compared to those implemented by the RGZ government. This category emerged as a result of analysing user responses on questions concerning their usage of government websites. None of the users mentioned any Zanzibar Government website. Even the Zanzibaris were more aware of the GoT's websites such as Tanzania Revenue Authority (TRA) and NECTA. The following excerpt points this category.

"Yes, I have used the NECTA and the MoE (Ministry of Education and Vocational Training) websites for checking examinations for secondary schools and colleges… You know the way you do things in Dar es Salaam is not the same as in Zanzibar. But, you see, if you use the Union websites you can get benefits such as jobs in Dar es Salaam, or even here in Zanzibar. But I guess the Zanzibar websites will be providing information about Zanzibar only" (R.48).

Adequacy of access infrastructure

This issue relates to the difficulties that the citizens encounter in accessing the electronic services (Table 3-7). This issue suggests that inadequacy of access infrastructure jeopardizes adoption of e-Government initiatives. The categories comprising this issue include unavailability and unreliability of ICT telecommunications networks and computers, and lack of optimisation of the existing infrastructure.

Table 3-7: Adequacy of Access Infrastructure

Category	Codes	Quote	Observation
Inadequate ICT infrastructure	IN1-12	QIN1	Country infrastructure does not support the majority of the citizens to be digitally connected. this results in to digital exclusion and low adoption
Lack of utilisation of available infrastructure	IN13-16	QIN2	Currently e-Government initiatives are not designed to allow multiple channel accessibility. Many people have mobile phones, but thee-Government have not utilized this channel. Consequently, even mobile phone owners are digitally excluded; hence low adoption.

Telecommunication networks in Tanzania are still in their infancy stages. Thus, their geographical coverage and reliability poses a considerable access challenge to citizens especially in rural areas. This factor have been well elaborated in various reports such as UN (2008, 2005), Miller, 2007; Mutagahywa, Kinyeki, Ulanga (2007) and was expected. We encountered frequent references concerning unavailability or unreliability of ICT networks and computers in Morogoro, and Zanzibar. However, the situation was similar in Dar es Salaam *(QIN1)*.

There is a problem of infrastructure, meaning the physical facilities, telecommunication facilities and so on. Two, other include even roads to access where the service is. So it includes roads, and bridges, because if you have a regional centre somewhere, people need to move from that point A to B where the service is. So all those physical infrastructures are not there. When you are talking about e-government you need a certain bandwidth which is also associated with infrastructure and so on. (R. 16)

Table 3-8: E-Government Adoption in Tanzania: Initial Emerging Themes

Theme	Description	Specific key categories
Perceived government preparedness	Refers to the readiness of the e-Government initiative owner, to adequately offer, handle, and respond to citizens' enquiries in an electronic environment	-Administrative buy-in -Coordination mechanism -Adequacy of policies, guidelines and standards -Adequacy of government practises, processes, and procedures
Citizen preparedness	Refers to the readiness of the citizens to demand and use government electronic services	-Inadequate e-Government awareness and ICT skills -Affording to pay for -Preference for face to face communication
Adequacy of access-facilitating infrastructure	Refers to the availability of the supportive infrastructure for accessing e-Government services	-Availability of ICT infrastructure for access -Optimisation of existing ICT infrastructure
Service intrinsic issues	Refers to issues related to the services provided by the government and intended for citizens to use	-Service quality (System and Information quality) -Fitting in the union structure

Lack of optimisation of the existing channels was another issue observed to contribute to limit access to most of the citizens *(QIN2)*. We found that most of the current e-Government services are accessible mainly through the internet and computers. However, the internet and computers are not the widely available channels in Tanzania, but mobile phones, radio and TVs are available. For instance, in 2007 Tanzania had about 7.5 Million mobile phone subscribers (TRCA, 2007). This is about 19% of the whole country population of about 39 million people. If the government would have optimised the potentials such channels, more citizens would have access to e-Government. However, we did notice limited efforts in this direction. Consequently, citizens are electronically connected with other entities but not with their government.

3.4 Theoretical reflection on the findings

The preceding discussion presents that citizens adoption of e-Government initiatives in Tanzania is determined by four main issues (Fig. 3-1). They include (1) perceived government preparedness, (2) citizens preparedness, (3) perceived service intrinsic issues, and (4) adequacy of access Infrastructure. This suggests that high citizen adoption will be achieved if these issues will be considered and manipulated in favour of e-Government. In this section we compare our results against the existing literature. This helps to identify and explain any relevant similarities and/or variation from the existing body of knowledge (Charmaz, 2006, p.98).

Perceived e-Government preparedness suggest that, citizens will be more likely to adopt e-Government initiatives if they perceive and get convinced that the government (provider) is prepared to serve them electronically. The perceived government preparedness is a collective result of citizen's evaluation of (1) actions of the government officials (administrative buy-in), (2) the adequacy of processes, policies, standards, and (3) the extent to which the initiatives are coordinated. Citizens will be unlikely to adopt e-Government initiatives if they perceive that the government is ill-prepared to serve them electronically.

The government preparedness category has been discussed by previous information systems (IS) studies. For example, administrative buy-in has been studied as top management support, top management endorsement, and management commitment (Ebrahim & Irani, 2005; Ho & Ni, 2004; Mgaya, 1999; UN, 2004). On the other hand

issues concerning to formal and legal guidance, the importance of coordination mechanisms, and government business processes and coordination have also been explored (Ebrahim & Irani, 2005; EOCD, 2005; Lenk & Traunmuller, 2000, Li & Stevenson, 2002). Other issues signalling to the preparedness of the government are improved online presence, and internal technical readiness (Norris, 2007).

The literature presented above highlight the importance of government preparedness on the adoption of e-Government initiatives. However, most of the authors emphasise ofn the importance of the discrete elements regarding government preparedness. Additionally the elements are mainly contributed from the providers' perspective, the government. In this study we observe two important contributions. Firstly, the government preparedness is the sum of the readiness of various aspects of the provider (government) visible to the recipient (citizen). Second, the extent to which the government is prepared to shift from traditional to new electronic service practises influences the disposition of the citizens to adopt or reject its electronic services. This happens when citizens evaluate and build conviction that they can trust the government (Carter & Weerakkody, 2008) and rely on the new practises of the government.

The literature investigates extensively the potential to user-related factors influence individual user' decisions towards e-Government adoption. These include IT skills, demographic characteristics, civic mindedness, perceptions on image, usefulness, control on technology, peer pressure, etc. (Diminitrova & Chen, 2006, Ebrahim & Irani, 2005; Gupta et al., 2008; Ho & Ni, 2004; Venkatesh, 2003; Warkentin et al., 2002). These factors are many and they help us to understand potential issues, and validate our findings. However, they are still too general to explain the adoption in specific contexts. The factors we identified in this study; being able to afford ICT, low ICT skills, low awareness of e-Government services, and preference for face-to-face communication relevant are typical to Tanzania as a developing country. This is because, as a poor country, most of its citizens have low an income to afford the costs of internet connection, and ICT education. On the other hand e-Government is still new for people to be aware of and gain confidence over traditional practises.

Evidence on the relationship between service intrinsic issues and e-Government adoption are available (e.g. Kumar et al., 2007; Tan, Benbasat, & Cenfetelli, 2008;

Wangpipatwong, Chutimaskul, & Papasratorn, 2005).The quality issues identified in this study are all available in the literature. However, it was interesting to discover that the political arrangement of a country may play a significant role in the adoption process. We discovered the influence of the Union arrangement between GoT and RGZ as a new factor. Before this study, we had yet to encounter the theoretical discussion of such arrangements in relationship to the adoption of e-Government. This factor may be a new discovery but also issues that practitioners of e-Government in Tanzania need to consider.

Findings on the access limitations to electronic service in developing countries are not new. Many studies (e.g. EOCD, 2007, InfoDev, 2002; UN, 2008, 2005) have suggested general importance of infrastructural limitations in developing countries, and Africa in particular (Kalu, 2007). However, lack of utilisation of the locally widely available infrastructure to facilitate access is a new revelation. In the case of Tanzania, alternative access channels are available. These include radio, television, and mobile phones. For instance, we established that in 2008 there were over 13 million mobile phone subscribers in Tanzania (TCRA, 2009). This indicates that many people have access to mobile phones. The mobile phones have demonstrated a higher domestication potential (NAO, 2002) in Tanzania than the internet. Therefore, it is relevant to suggest that the potentials of mobile phones could be harnessed to improve access to the majority of the citizens. We hence subscribe to the concept of mobile government (m-government). This concept advocates the use of mobile technology as an alternative approach (e.g. Kushchu & Kuscu, 2004; Trimi & Sheng, 2008). In this way, citizens will not be constrained by the lack of computers. Instead, they can access e-Government services through their mobile phones.

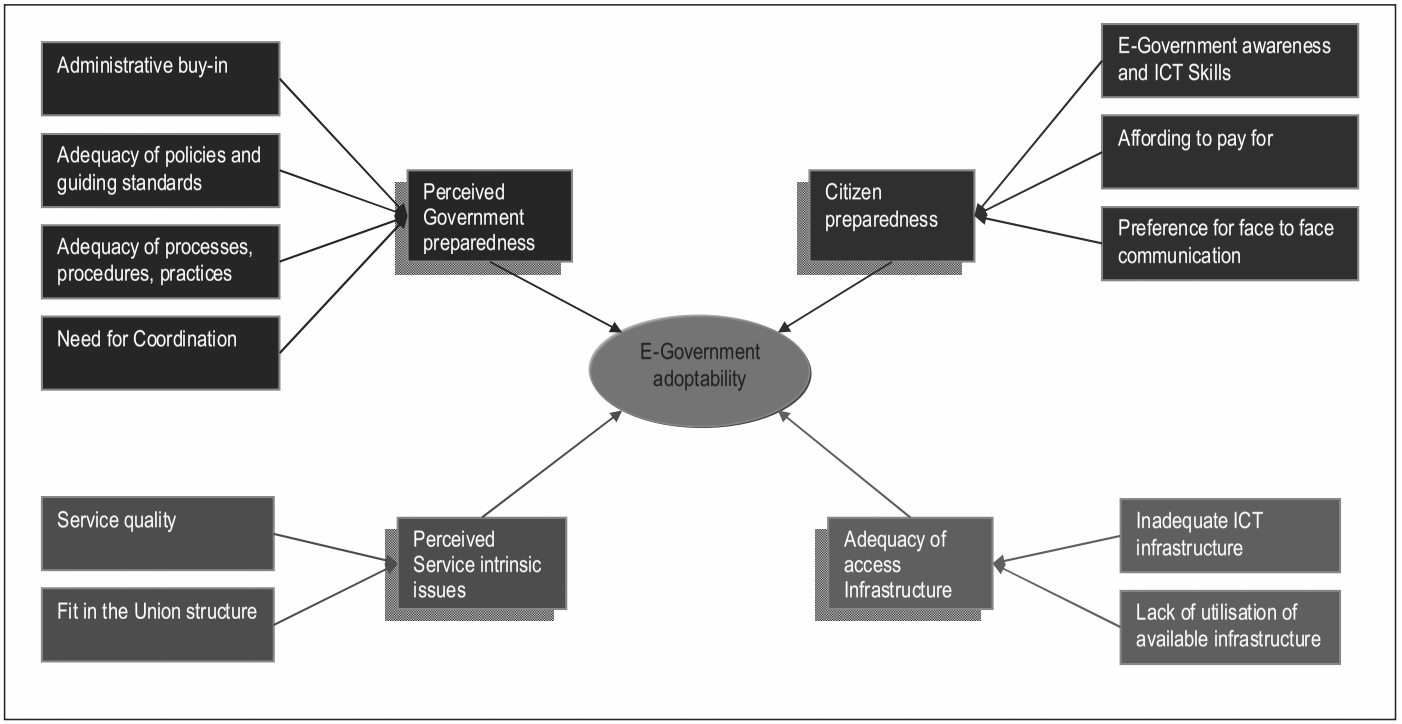


Figure 3-1: Initial Issues Influencing the Adoption of E-Government in Tanzania

3.5 Summary

In this chapter we presented the process and findings of the initiation phase of our research. In the initiation phase we wanted to understand our research context and scope our study concerning e-Government adoption in Tanzania. Specifically we focused on initiatives which facilitate the contact between the government and citizens. We learned that currently government websites are the main channel used for e-Government service delivery. The websites fall between publishing and interaction stages of e-Government evolution. Four initial constructs possible for future studying of e-Government adoption in Tanzania emerged. They are (1) preparedness of the government, (2) citizens' preparedness, (3) perceived service quality, and (and) access limitations. These can influence citizens' adoption of e-Government in Tanzania.

E-Government in Tanzania involves several actors in the form of implementers and users. The main target users are citizens and businesses. Users are expected to accept, utilize, and evaluate the e-Government initiatives provided. On the other hand the e-Government initiatives are conceived, developed, and deployed by individual government institutions. This is because each government organization has its own services, priorities, most importantly, budgetary vote. Hence, planning, funding, deployment, and evaluation of e-Government initiatives happen at this level. However, we did not investigate initiatives at institutional level. This would run counter to our intention of developing a useful solution for achieving high citizen adoption of e-Government initiatives. In chapter 4 we present the process and results if studying e-Government adoption at institutional level. This activity allowed us to interact with the real-world of e-Government (implementers and recipients) to determine future solutions for the low adoption of e-Government initiatives.

Chapter 4
Understanding e-Government adoption issues in Tanzania

In chapter 3, we presented the results from the initiation phase of this study. The results show that ICT channels, such as the internet, radio, television and mobile phone, are currently used for e-Government in Tanzania. However, websites are the major focus channel of the government. We established that the websites can be placed between the publishing and interaction stages of e-Government evolution. We presented initial constructs that helped us scope our study. They include perceived government preparedness, citizen preparedness, perceived service-intrinsic issues, and access limitation. However, these issues may not fully explain the adoption of e-Government initiatives in specific contexts. In this chapter, we will present the process and results of the second phase of this study. In this phase, we aimed to investigate issues influencing the adoption of specific e-Government initiatives in Tanzania. To this aim, we investigated the adoption of three initiatives from three government organizations..

4.1 Introduction

In chapter 3, we presented the results of the initiation phase of this study. We presented initial constructs regarding the adoption of e-Government initiatives in Tanzania. This helped us scope our study about e-Government in the Tanzanian context. We considered this phase as a general exploration of the context. E-Government initiatives in Tanzania are incepted, deployed, and evaluated at the level of individual government institutions. In other words, it is the individual government institutions that incept, organize funding for, design and deploy e-Government initiatives with the aim to provide organization-specific services to citizens. Therefore, adoption, rejection and related issues can be understood better when studied at that level.

In this chapter, we will present the results and activities of the second phase of this study. In this phase, we wanted to conduct an in-depth study on the adoption of e-Government initiatives in Tanzania. Using insights from the first phase as our initial study lens, we investigated the adoption of e-Government initiatives from three government organizations. In the next sections, we will present our approach, case descriptions, case results, a cross-case analysis, and the results.

4.2 Approach

The activities in this phase correspond to the problem-solving cycle of the design science perspective (Hevner, 2007). This phase focuses on understanding a business problem through constant interaction with the application domain. The application domain comprises people, and organizational and technical systems. The resulting understanding is a key input for designing a relevant solution for the observed business problem. In this phase, we also engaged in gaining an understanding of a problem in an actual application environment. We focused on gaining an understanding of issues influencing citizen adoption of the initiatives in Tanzania. This allowed us to understand the situation and the issues related to citizen adoption of e-Government initiatives in Tanzania.

We studied the adoption of e-Government initiatives in the application domain. We considered the application domain of e-Government initiatives as there where e-Government initiatives are designed, deployed, adopted and evaluated. As mentioned earlier in section 3.5, e-Government initiatives in Tanzania are mainly implemented by individual government institutions. Hence, initiatives intended for citizens are incepted, developed, deployed and evaluated by these institutions. Studying e-Government at that level provides an adequate environment for identifying issues relevant to explain e-Government adoption in Tanzania, because in this environment it was possible to interact with the implementers (i.e. managers and developers) and adopters (citizens) of e-Government initiatives. Therefore, the environment allowed us to gain a better understanding of the situation and the issues underlying the adoption of e-Government initiatives by citizens in Tanzania.

In this phase, we adopted the case study approach (Yin, 2003) as our instrument. According to Yin (2003), this approach is relevant when answering ‘how’ and ‘why’ questions. It is also useful when investigators have little control over events, and when the focus is on contemporary phenomena within a real-life context. Yin’s descriptions fit well with the nature and purpose of our study in this phase. This is because, first of all, we wanted to understand how the current adoption situation of e-Government initiatives by citizens is in Tanzania. Secondly, we aimed to establish why the situation is the way it is. Thirdly, our study concerned a new innovation (e-Government) in the public

sector. In this context, our control on various influencing variables (e.g. government activities, respondents, and attitude towards e-Government) was limited. Therefore, we found the case study approach relevant to our study.

4.2.1 Case selection

The choice of case organizations was based on the objective of the study. That is, we wanted to establish issues underlying citizens' adoption of e-Government services in Tanzania. However, Tanzania is a unitary republic comprising of Tanzania mainland and Zanzibar. Thus, it was necessary that we choose central government organizations because they cover both sides of the Union (Tanzania Mainland and Zanzibar). We particularly focused on organizations with experience in providing some services to the citizens by means of a website. Most of the websites we identified during the initiation phase were possible for this purpose. However, we needed formal access to conduct our research in the organizations. With the help of the President's office Public Sector Management (PoPSM), three organizations (Table 4-1) granted access and were thus used for this study.

The National Examinations Council of Tanzania (NECTA) and the Tanzania Revenue Authority (TRA) provided access authorization letters first; whereas the Ministry of Finance and Economic Affaires (MoFEA) provided verbal access. We therefore studied the two first two cases, and then compared our findings with those from MoFEA. This approach provided us with an the opportunity to reflect and scrutinize our findings before proceeding with further investigation (Carol & Swatman, 2000).

Table 4-1 Case study organizations

S/N	Organization	e-Government initiative
1	NECTA	Online provision of secondary school and teachers' colleges' examination results
2	TRA	Online provision of tax-related information
3	MoFEA	Online provision of finance-related information and reports

4.2.2 Case descriptions

Case description: NECTA

NECTA is a government body established in 1973 by the Parliament Act No 21 of 1973 (URT, 1973). The organization is responsible for formulating, conducting and regulating examinations in Tanzania. NECTA deals with all examinations, from primary and

secondary schools to other professional examinations, including teacher college examinations. During the study, the organization had over 200 employees in different levels of operation.

E-Government at NECTA

NECTA has been strengthening its internal ICT infrastructure capacity since 2003. The organization has a 16-core fibre optic backbone out of which 6 have been deployed for internal communications; the remaining 10 are left for future developments and expansion. Connectivity is established through 3 different LANs namely *red, orange and green*. Red and orange are for internal use while green LAN is used for internet access. Communication between NECTA and the general public is accomplished through the traditional channels (newspapers, fax, phone, and post), the website (www.necta.go.tz), and email (es@necta.go.tz). We focused our investigation on the adoption of the website because as it was the only channel that fits the objective of our study.

NECTA website and the degree of adoption

The NECTA website was launched in 2003. The website is managed by the Information Technology (IT) section in the department of research evaluation and data processing. The department is responsible for developing the website and managing its content. The NECTA website provides information concerning the organization (e.g. the Establishment Act) and examination registration lists. It also provides details on the types of examinations administered by the organization, their registration periods, regulations, and examination results. The information is mainly used by secondary school and teacher college students, and teachers, parents and guardians. Other users include government institutions, researchers and other education stakeholders.

We observed that the provision of examination results is the mostly used electronic service from NECTA. This was illustrated by the analysis of the web statistics obtained from NECTA. The statistics show that the website received 7,813,920 hits between March and August 2008. Monthly web hits analyses show that the website is mainly used when the examination results are announced. Table 4.2 below shows a high number of hits in May 2008 when the Form Six and teachers' examination results were released.

Table 4-2: NECTA Usage Statistics

Summary per month						
Month	**Monthly totals**					
	Sites	**Kbytes**	**Visits**	**Pages**	**Files**	**Hits**
Aug-08	3224	4016353	12638	85150	219632	369507
Jul-08	4870	5337949	20288	119423	347169	558349
Jun-08	5746	6280011	21655	142491	357186	588527
May-08	12,744	55,850,399	191,683	1,865,029	3,281,508	5,320,417
Apr-08	8929	7381280	28315	176047	420194	742332
Mar-08	4190	3498524	8640	62316	139284	234788
Totals		**82,364,516**	**283,219**	**2,450,456**	**4,764,973**	**7,813,920**

Source: NECTA, 17 August, 2008 (Generated by Webalizer Version 2.01)

Further probing during interviews and FGDs (section A and B) revealed that all 69 respondents who participated in the NECTA investigation indicated to know or have used the website. When we visited three cybercafes in Morogoro, we observed candidates queuing to get access to computers to view the newly announced examination results. In one cybercafe, we observed one computer being used by a group of people for the same purpose.

We observed that the NECTA website received a seasonal high utilization degree. This utilization takes place only during the announcement of examination results. The website experiences a low utilization degree in other periods, for example during exam registration and results-slip seeking. A manager from NECTA clarified that during the announcement of examination results, the organization has to request the increase of internet bandwidth.

> *"Actually there is a problem. Currently we are getting 128/256 kbps, which is very minimum. We experience a problem during examination results. When we publish the results we put them on the internet. Because of the speed, 128/256 kbps, during the examination result release we requested our ISP, at least to increase the bandwidth to 256/512 kbps. We still experienced the problem because 256/521 kbps was also on the minimum. Because at that time you can imagine that all candidates want to access the results, because we came to realize that the easiest method for the candidates to get their results is through the internet" (N.R16).*

Case description: TRA

TRA is a central government revenue body established in 1995. The organization is responsible for assessing and collecting specified revenue, and administering and enforcing the tax related to government revenue (URT, 2006). TRA is mandated to

conduct its business in the Tanzania mainland and Zanzibar. However, Zanzibar has its own revenue board, the Zanzibar Revenue Body (ZRB). In Zanzibar, TRA deals only with the collection of specific taxes. These include income tax, customs tax and excise duty. ZRB collects and administers all other taxes on behalf of the Revolutionary Government of Zanzibar.

E-Government at TRA

TRA has a statutory responsibility of improving the standards of service provided to tax payers. The purpose is to attain a high level of effectiveness and revenue collection (URT, 2006). To achieve this, the organization has invested in ICT as one of the key enablers for success (TRA, 2005). Coordinated by the directorate of ICT, the organization has implemented various ICT systems to facilitate its business activities. These include ASYCUDA ++, Integrated Tax administration System, Computerised Motor Vehicle Registration system, radio and data communication infrastructure, and the TRA website (www.tra.go.tz) (TRA, 2006). The organization has also prepared specific ICT policy and its implementation strategy worth USD 14,774,372 for the period of 2005-2008 (TRA, 2005). In 2008, the employee-computer ratio is 3:1; the number of employees is 3500 (Wakati, 2008, pers. comm., 31 October).

TRA management has demonstrated a positive attitude towards ICT in organizational business activities. This was indicated by the ratification of ICT policies, strategies, and budgets (TRA, 2006, 2005a, 2005b). The management has also modified the structure of the organizational structure whereby the director of ICT reports directly to the deputy CEO (Appendix 7.12). Further the management created a multi-departmental TRA modernisation team that determines, evaluates and monitors the deployment of ICTs within the organization. The organization has also been investing in raising public awareness through taxpayers workshops, media campaigns (radio, television, and newspapers), and participation in trade fairs (e.g. Dar es Salaam International Trade fair (DITF)).

TRA has a statutory responsibility of improving the standards of service provided to tax payers. The purpose is to attain a high level of effectiveness and revenue collection (URT, 2006). In order to achieve this, the organization has invested in ICT as one of the key enablers for success (TRA, 2005). Coordinated by the directorate of ICT, the

organization has implemented various ICT systems to facilitate its business activities. These include ASYCUDA ++, an integrated tax administration system, a computerized motor vehicle registration system, a radio and data communication infrastructure, and the TRA website (www.tra.go.tz) (TRA, 2006). The organization has also prepared a specific ICT policy and its implementation strategy, worth USD 14,774,372 for the period of 2005-2008 (TRA, 2005). In 2008, the employee-computer ratio is 3:1; the number of employees is 3500 (Wakati, 2008, pers. comm., 31 October).

TRA management has demonstrated a positive attitude towards ICT in organizational business activities. This was indicated by the ratification of ICT policies, strategies and budgets (TRA, 2006, 2005a, 2005b). The management has also modified the organizational structure whereby the director of ICT reports directly to the deputy CEO (Appendix 7.12). Furthermore, the management created a multi-departmental TRA modernization team that determines, evaluates and monitors the deployment of ICTs within the organization. The organization has also been investing in raising public awareness through taxpayers workshops, media campaigns (radio, television and newspapers), and participation in trade fairs (e.g. Dar es Salaam International Trade fair (DITF)).

TRA has been modernizing its internal business processes and procedures since 1998 (Kitillya, 2006). Currently, most of its processes are prepared using computers. However, manual processing is still the dominant way of processing business transactions. This means that even though employees use their computers for processing, at some point they still have to complete their activities in a traditional physical file system commonly known as dokezo. The lack of computers, poor ICT networks, an unsupportive mindset and a lack of systems integration were identified as factors contributing to this situation.

TRA has a free internal e-mail system available for its employees. An employee who wishes to use the service is required to complete a request form and send it to the ICT directorate for approval and account creation. However, employees are not obliged to request or use the internal e-mail system. E-mails are used for both personal and official communications, but most official communications still must be sent through the dokezo system.

TRA website and the degree of adoption

The TRA website was launched in 2003. It is jointly managed by two directorates; the ICT, and the Taxpayer Services and Education directorates. The former provides technical support, while the later maintains the contents, and also handles customer enquiries submitted through the organizational contact email (info@tra.go.tz). The website provides information concerning tax laws, polices, regulations, and procedure. Other available services include downloadable forms, email access to TRA staff, and tender and vacancies advertisement. Links to other websites and frequently asked questions (FAQ) are other included features. The targeted users include importers, employees from various organizations, traders, and the citizens in general.

The degree of utilisation of the TRA website was established by analysing the web counter figures, and the discussion with the management and other stakeholders. We also spent time at internet cafés to observe of individuals' utilisation. In April 2008, the web counter (installed in November 2007) had registered about 60,000 visits (T.R.6). The management interpreted the number as cumulative visits since the installation of the counter, but suggested that the website is yet to receive high utilisation when compared to the taxpayer base of around 300,000 (T.R.6, 7, 8). On 1st, 22nd, and 24th July, we recorded the web counter at 97,825, 100,124, and 102,653 respectively. We also visited cybercafés to establish whether the website is being accessed. We observed that visitors only accessed the NECTA and MoEVT websites. We hence interpreted this situation as indicating low adoption.

Case description: MoFEA

MoFEA is a Tanzania government union ministry[8] responsible for the overall management of government revenue and expenditure. The ministry also provides professional advice to the government on financial and economic affaires. MoFEA is headed by a minister, two deputy ministers, and two permanent secretaries (PS); paymaster general, and PS for treasury services. The ministers play political roles, while the permanent secretaries are the chief executives of their respective hierarchies. The ministers, the PSs, and their deputies are appointed by the President of URT.

[8] Some ministries operates only on one side of the Union

E-Government at MoFEA

The ICT-based modernisation of MoFEA's business processes started when the first computer (ICT 1500) was installed in 1965 (Mgaya, n.d.). In recent years, the Ministry has benefited from the Public Sector Reform Program (PSRP) in which E-Government is a key agenda (PoPSM, 2006). Through this program, together with internal efforts, various ICT initiatives have been undertaken to modernise the ministry's business functions. These include installation of telecommunications networks, implementation of various inter and intra ministerial systems, and the creation of a website (www.mof.go.tz). The website is the only computer-based channel used to communicate with the public. Other channels are TV, radio, newspapers, phone, and fax for serving the general public. For the purpose of this study, we focused on the adoption of the ministry's services provided by means of the website.

MoFEA website and Degree of adoption

The MoFEA website was officially launched in 2006. Currently it is jointly managed by the information and communication, and the computer services department. The former manages the content while the later provides technical support. The website provides diverse information. They include including information about the ministry, financial policies, laws, and regulations. Other includes government vacancies, tenders, and auctions. The website also has a search capability and provides access to staff emails.

Table 4-3: MoFEA - 10 Most Accessed Webpages (2006-2008)

S/N	Title Page	Page impression
1	About the Ministry	13556
2	Regular News	11133
3	Human Resource Management	10680
4	Budget	8914
5	Millennium Challenge Account - Tanzania	8245
6	Advertisements	6874
7	Revenue & Taxation Policy	6037
8	Structure of MoFEA	5230
9	Central-Local Government Finances	4715
10	Government pensioners	4714

Source: MoFEA, 11th September, 2008 (Generated by Webalizer Version 2.01)

The degree of utilization of the website was established by analysing the web-hits of the top most visited WebPages (Table 4-3). This information was also discussed with both the management and the other stakeholders during interviews and FGDs respectively (Appendix 11.B). Table 4-3 shows that the landing page (about the Ministry) was the most visited webpage since the launching of the website in 2006. It

had recorded 13,556 hits as 11th Sept, 2008. Both the management and the user respondents perceived that such figures indicate low degree of utilisation of the website for a period of 2 years.

4.2.3 Data Sources

The choice of data sources and data capturing techniques was based on the information needs of this research. We needed information that could inform us of the degree of adoption and issues potential that might explain the degree of adoption. We observed that relevant information should be obtained from the case organizations and their stakeholders. Accordingly, our information sources were officers and customers of the organizations, and other documentary evidences. Managers and customers provided us with experiences, opinions, and actions that pointed to adoption issues. Documentary evidences provided us with recorded evidences.

Various data collection techniques were used to capture data from the field. These included face-to-face interviews, focus group discussions (FGD), documents, observation, and web-hit statistics. Table 4-4 below provides a summary of the tools used per each case.

Table 4-4: Summary of data collection tools used per case

Technique	NECTA	TRA	MoFEA	Total
Interviews	16	11	7	34
Focus group discussions	8	5	7	20
Observation reports	2	2	1	5
Internal workshop	1	-	-	1
Web statistics report	1	1	1	3
Internal documents analysed	5	5	5	15
Newspapers analysed	26	-	-	26
Stakeholders workshops	-	-	-	3

4.2.4 Data capturing procedures

Interview handling

Interview guides were designed and used to facilitate the elicitation of information from different sources. We provide them in appendices 3.B to 5.B. For all in-depth face-to-face interviews a formal appointment was made with the respondent to prepare the interview session. The interview guide was not revealed to the respondents until during the interview to avoid fabricated or 'from-the-book' response. We used a microphone

attached to a laptop computer and a voice recording application called Audacity[9] to record the interviews. We recorded all face-to-face interviews except where there was a restriction. The duration of the interviews ranged between 30 to 135 minutes. Each interview was transcribed and prepared for analysis with Atlas.ti.

We also conducted interview exit interviews. In this type of interview, respondents were obtained when waiting for services or leaving premises of the case organizations. It was not possible to record the exit interviews because the respondents were obtained impromptu from the case organizations' premises. The recording was seen to make them uncomfortable to accept and respond to questions. These interviews had duration of between 15 to 25 minutes. An interview summary was then prepared for analysis.

Focus Group Discussion handling

FGD guides for both case management and users were prepared prior to the beginning of the study (Appendix 6.B & 7.B). At the beginning of each FGD, participants were introduced to the research topic and the information required from them. Participants were then divided into smaller discussion groups, served with the appropriate guide, and given between 30 to 40 minutes for discussion. A joint FGD was then be convened for each group to present its observations. Participants from other groups were allowed to discuss and comment on contributions made by the presenting group. A summarized report was prepared for analysis and emailed to each participant for verification. The average duration of each FGD ranged between 1.5 to 2.5 hours.

Document Analysis and Observation procedures

A document analysis form (Appendix 5.A) was used to facilitate the analysis of the documents. This form was also used during the exploratory stage in Phase 1. Formal documents such as organizations reports, strategies, publications etc. were requested from the case organizations. Other documents such as laws, business cards, newspaper publications, and website pages were obtained on the researchers' own initiatives. All the documents were read and relevant points were summarized and prepared for analysis. While formal documents were used to elicit information about the organizations, informal documents such as business cards were used to trace informal issues (e.g. the use of yahoo, hotmail, or Gmail email accounts to mitigate the

[9] Audacity is freely available from the internet

unreliability of internal email services). In addition, we used an observation (Appendix 6.A) to structure the observations we wanted to do. This tool was also used during phase 1. The resulting reports were entered to Atlas.ti as supporting field notes for the appropriate categories

Stakeholder Workshops

The stakeholder workshops were organised to provide a forum for the verification of the various issues identified in the study. A detailed presentation was given at the beginning of each workshop. Participants were then allowed to contribute their opinions concerning each issue and category presented. Notes were taken during discussions, and at the end of each workshop a summary was prepared for analysis.

4.2.5 Respondents profiles

159 respondents participated in this study. 69 participated for NECTA, 41 for TRA, 31 for MoFEA, while 31 participated during stakeholder workshops. Tables 4-5 and 4-6 below provide a summary of the respondents.

Table 4-5: Summary of the respondents' profiles

Organization	Respondents	Number
NECTA	Management	8
	Teachers	4
	Parents/guardian	11
	Secondary school pupils	18
	Undergraduate students	13
	Private candidates	4
	IT experts	6
	Zanzibar	5
TRA	Management	8
	Clearing agents	2
	Government employees	15
	Zanzibar	5
	TRA visitors	5
	Undergraduate IT students	5
MoFEA	Management	5
	Visitors	3
	Government employees	14
	Non Governmental Organizations	7
	Zanzibar	7
	From private organizations (NGO)	4
	From United Nations organizations	10
Total		**159**

Table 4-6: Stakeholders Workshops Participants

Workshop	Number
Regional ICT stakeholders[10]	8
General stakeholders	15
ICT expert workshop	8
Total	**31**

4.2.6 Data management and analysis

Data were analysed qualitatively (Straus & Corbin, 1990). During open coding we generated an initial code list from the categories identified in phase 1. This was intended to verify the relevance of the ideas being suggested. However, whenever we encountered a fresh idea, a new code was assigned to it. This coding practise was useful because it allowed us to enrich our initial understanding through revelation of new insights from the cases.

Axial and focused coding involved scrutinizing the codes and categories to establish their relationship with the adoption of e-Government. Memos were then written to explain the resulting categories and the relationship with the adoption phenomenon. Whenever a concept was encountered and needed clarification, a follow-up interview, mainly over the phone, was initiated and clarification sought.

We used Atlas.ti to manage and analyze the collected data. This application allowed us to flexibly manage code, relate, merge, and modify ideas identified. By using this application one Hermeneutic unit (database), was created for each case investigated. This allowed us to analyse and compare results from the individual cases.

4.2.7 Data validation

In this research we used three workshops (Table 4-6) to validate and clarify the initial results obtained from our field work. One workshop for ICT experts and one which involved experts and non-ICT experts were conducted in Dar es Salaam, Tanzania. A third workshop was conducted in South Africa, in which participants from SADC countries participated. Notes and summaries collected from the workshops were coded and related to the key categories emerged during case study.

[10] The workshop involved participants from Botswana, Malawi , Mozambique , Zambia , Zimbabwe , Tanzania , and South Africa and was organized by Sangonet

In the subsequent sections, the results are discussed and their relationships to adoption of various websites are also presented. For confidentiality purposes, we code our respondents in the form of X.RY where X denote organization; N (NECTA), T (TRA), M (MoFEA), while RY stands for respondent or primary data source. For instance, N.R30, denotes a response from respondent number 30 from NECTA. We also use the above system when referring to specific codes. E.g. N2 means code number 2 from NECTA code list. References to specific sample quotations (Appendix 2.B) are denoted by Q followed by a quote number (e.g. Qt7). We also use NS, TS, and MS to label stakeholder at NECTA, TRA, and MoFEA respectively.

4.3 Case study results

4.3.1 Issues influencing the adoption of NECTA website

In this section we present our observations of the factors that influence the adoption of NECTA's website. We present respondents observations on issues possible to influence citizens to adopt or reject NECTA's website.

Organizational preparedness

Several factors pointed to the importance of organizational preparedness at NECTA. These include the need for administrative buy-in, need for enforcement/incentive strategy, need for mindset change, concerns over policies, practises, and procedures, and need for coordination. We group these factors into two main categories, organizational buy-in, and adequacy of internal processing machinery (Table 4-7). We then present a summary of our observations in the subsequent sections.

Table 4-7: Organizational Preparedness

Sub category	code	Observation
Organizational buy-in	N10- 13	Inadequate organizational-wide buy-in contributes to the perception that NECTA is unprepared for the electronic environment
Adequacy of internal processing machinery	N14	Deficient of NECTA's internal processing machinery contributes to the perception that it is unprepared for the electronic environment

NECTA's buy-in for the provision of its services in an electronic environment was an interesting phenomenon. The top management demonstrated considerable commitment in using ICT as a key enabler of NECTA's businesses. This was observed through budgetary support to the IT unit, ICT infrastructure acquisitions, announcing examination results through the website, and introducing communication by email. The

executive secretary (ES), the organization's CEO puts this emphasis in the quote below, and we regard this as top management buy-in.

"You see, I have not failed yet, I have money. I want you ICT people to tell me what I should do with ICT. I am not afraid of the increase of the examination candidates. Actually, the more candidates I get the happier I become, because I earn more money. So I need them, but I also want them to be happy with me" (N.R16)

Although the CEO demonstrated a level of buy-in, this was not reflected in the perceptions and actions of the lower level management. Typical examples were on the ownership of the website, and the utilisation of emails in the organization. Because the website is managed by the IT section, other departments do not see it as an organizational tool that they can also use. For example, in the analysis of 26 adverts by the public communication unit (Appendix 8.B), none of them were advertised through the website. Only 6 publications had mentioned the website URL in the contact address. The discussion of this issue with the communication officer showed that they perceive that the website belongs to the IT section, and is mainly for examination results not for other information (Qt5). Additionally, although the organization has internal email system, the ES and other staff do not use the facility for communication in their internal business activities. Further, there was no emphasis, sanctioning, or incentives for promoting such in internal and external utilisation. An accountant told us that:

"I also think that top leaders have not exerted the required emphasis. I do not think if you can write an email to our executive secretary here and expect her response. She may actually send a secretary to do so. Why would the CEO then expect you to respond to emails?" (N.R12)

Inadequacy of policies concerning government business processes and practices was another contributing factor. NECTA do not have documented policies or strategies for both governing not only the implementation of ICT, and also for guiding and enforcing the business functions in the electronic environment. The current working polices, strategies and practices do not formally recognize electronic documentation and communication (Qt3). Consequently, most of the business processes including the handling of electronically submitted enquiries (e.g. emails) are treated in the traditional manual fashion (Qt4).

The above discussion shows a situation where the top management demonstrated a certain level of buy-in for e-Government. However, that buy-in is not organization wide.

It is not reflected in other management levels and business processes. As a result the organization is perceived as unprepared for electronic environment (Qt6). This observation is important because in daily activities, users do not frequently interact with top management. They do so with the low level management who implement procedures, practices, and processes of the organization. We perceive that the current level of preparedness manifested by NECTA's, and perceived by the intended users of its electronic services, is inadequate to convince them that the organization is set to serve them in an electronic environment. Accordingly, we suggest that this perceived inadequate preparedness contributes to low adoption.

Citizens' preparedness

The importance of this category was observed through four subcategories; affording to pay-for, need for ICT skills, awareness of the existing services, and preference for face-to-face communication (Table 4-8).This category was important because most of the users are students, their parents and teachers. This group comprises people without personal income (students) and low income (teachers). Students depend on their families for financial support, while teachers (parents as well) earn low income. This makes them unable to afford the cost of equipment (computers), and internet connectivity (Qt7 & 8). We observed that the salary of a primary school teacher is between TSh. 80,000 and 160,000, (USD 80 and 160 respectively) while that of a secondary school teacher is between TSh. 180,000 and 300,000 (USD 180 and 300). The initial cost of internet connection at home is between USD 150 and 300 (USD 150 and 300), while monthly internet connectivity cost was between USD 45 and 65. The average cost of internet access per one hour session in cybercafés is between TSh. 500 and 2000 (USD 0.5 and 2.0 respectively) hour. This makes most of users to occasionally access the website through cybercafés.

Table 4-8: Citizens Preparedness

Subcategory	Code	Observation
Affording to pay-for	N1	Users' inability to afford the access costs makes them infrequently access the website through cybercafés
Need for ICT skills	N3,4	Inadequacy of users' ICT skills defines their low preparedness towards using NECTA's electronic services
Awareness of existing services	N2	Users' awareness of the provision of examinations results caused seasonal high utilisation , while unawareness of other available services explains general low adoption of the website
Preference for face-to-face communication	N5	Face-to-face service provision is still the preferred mode by NECTA customers

The need for ICT skills was also an important factor. This is because currently the main means of accessing the website is through computers. ICT skills are therefore necessary for one to be able to operate a computer and use the internet. The ICT skills problem was observed from students as well as other users (Qt9, 10). We observed that students in the urban areas were more exposed to ICT than those in rural areas. This may be because of the newness of ICTs in Tanzania, cost, availability computers, and because ICT training is not a compulsory subject (Qt10). A secondary school teacher expresses how ICT skills inadequacy challenges teachers:

> *"Most of the teacher's do not have and do not know how to use emails. Although NECTA currently requires us to provide them with students' records in electronic forms, very few of us can do that. We still have to prepare the results in papers and then find someone to type for us. Then the records are submitted through flash disks or CDs" (N.R26).*

Awareness was an important factor for the adoption of the NECTA website. All of our respondents were aware of the website so that some respondents used it as an example when discussing about other websites. However, this awareness was only on the provision of examinations results. As shown in Table 6, the website was mainly used during examination and received low utilisation when the examination announcement season is over. Other services such as publishing of examination numbers, and examination regulation and appeals were limitedly known to people. This may be because NECTA do not publicise (advertise) its online services to its stakeholders (Qt11).

Preference for face-to-face communication was observed to be important at NECTA. On 1st and 2nd September, we conducted an observation session. We wanted to establish reasons that necessitate people to visit NECTA offices. We also investigated the availability of related answers on the website and whether the website was consulted as people first before visiting NECTA. We established that the main reasons for visiting NECTA were enquiries on result slips, certificates, and examination registration (dates, and procedures and appeals). Although some of this information was available online, visitors did not consult the website first before vesting NECTA. This was also checked with results of question 2 in our FGD guides (Appendix 6.B, 7.B). We learned that the majority of the people were more comfortable with face-to-face communication as compared to using electronic means in contacting NECTA (Qt, 12, 13).

Service intrinsic issues

Four categories of issues related to the service offered through the website emerged as important (Table 4-9). These include the quality of information, quality of the website, general service issues, and fitting in the union structure.

Table 4-9: Service Intrinsic Issues

Subcategory	Code	Observation
Information characteristics	N17-22	Examination results was the most appreciated information on the website, however, other aspects (incompleteness, infrequent update, and complexity) of concerns
Website characteristics	N23,24	Poor design, and unreliability undermine the main website issues
General service issues	N25	Poor responsiveness, and lack of privacy discourages the utilisation of the website
Fit in the Union structure	N26-29	The website attracts users from both sides of the union

We identified important concerns regarding the characteristics of information on the NECTA website. In this regard four factors; information incompleteness, obsolescence, complexity, and usefulness were identified. The usefulness of the information, specifically examination results, was the most appreciated factors. This is because people no longer need to travel to their respective schools, or to NECTA to view their examination results. However, the usefulness remained seasonal because the results published on the website can not be used for any other purpose. We established that even further learning institutions (e.g. universities) do not use the website to verify admission applications. Instead they send them to NECTA for verification. Further, other information provided was incomplete, because other than examination results, very little is available for users (Qt14). On the other hand, infrequent updating makes the information obsolete, while the use of English instead of Swahili language made it difficult to use.

Characteristics of the website were indicated by the design and the reliability (availability) of the website. NECTA website design was simple such that even beginners could use it. However, it was also unattractive and poorly designed (Qt16). Additionally, the website was unavailable and unreliable especially during examination announcement (Qt15). We interpreted these attributes as pointing to design issues of the website as a system. Although related, this observation delineates the content from system characteristics.

Lack of timely response to users' emails (N24) was one of the most frequently commented factors that discourage people from using NECTA's website (Qt 17). This was also observed during researchers' communication with the organization. Frequent emails were sent to NECTA officials; however few were answered. The answers involved long delays. Lack of timely response undermines the inclination of users to frequently utilize the website and emails to contact NECTA. In addition, we observed concerns on the importance of privacy regarding information on NECTA's website. This is because NECTA initially published exam results with candidates' full details. Complains concerning the issue forced NECTA to publish form VI results accessible only with candidate examination numbers in May 2008.

NECTA and its services fit well in the countries union structure. This is because NECTA is the only legal primary and secondary level examination body in the country. Therefore its mandate and services are enforced by law (URT, 1998; URT, 1973) in both Tanzania mainland and Zanzibar. This may be one of the reasons that the website receives high utilisation during examination announcement.

Inadequacy of access infrastructure

Inadequacy of access infrastructure was an important factor observed to influence the utilization of NECTA website. This includes inadequacy and unavailability of ICT networks of computers, supporting infrastructures e.g. electricity (Qt19-22). Specific factors that contribute to this category include inadequacy of ICT networks, and availability of computers especially in the rural areas (Table 4-10). This factor was expected, and we observe that because the situation is national it will affect NECTA as well as other websites.

Table 4-10: Inadequacy of Access Infrustructure

Subcategory	Code	Observation
Access infrastructure limitations	N6	Inadequacy of access infrastructure limits people from utilising nectar electronic services
Lack of computers	N7	Lack of computers inhibits people from using the internet and websites

Summary

The above discussion we have highlighted the degree of the adoption of the NECTA's online services, and the related reasons. We observed that NECTA's website receives seasonal high degree of adoption. The main reasons related to this situation include

perceived low degree of organizational preparedness, service related issues, unpreparedness of the user, and access limitations. Specific factors included under these categories provide focused explanation on issues that promote or discourage the current level of adoption.

In this discussion it is important also to note that some of the factors which influence the adoption of NECTA website do not necessarily originate from NECTA. For instance in order for the website to contain relatively complete information, information contributions from other organizations are also important. For example, NECTA collaborates with Tanzania Posts Corporation (TPC) on issuing result slips. However, the information on payment procedures and posting of the slips is the responsibility of TPC. However, because this information is not available even on the TPC website[11] one will still need to visit NECTA or TPC offices. Likewise, incompleteness, usefulness, and availability would have been advanced if the website would have been included in other stakeholders (e.g. universities) website. NECTA can only deal with the information on its website. We observe that NECTA has a limit on the extent it can do. We label this new factor as line of responsibility.

4.3.2 Factors influencing the adoption of TRA website

Organizational preparedness

TRA preparedness was observed through organizational buy-in, and adequacy of internal processing machinery (Table 4-11).

Table 4-11: Organizational Preparedness

Subcategory	Code	Observation
Organizational buy–in	T13 -16	Organizational buy-in is visible for internal systems, but invisible through the online services
Adequacy of internal processing machinery	T17 -19	Inadequate internal processing machinery undermined users perceived organizational preparedness for online services

Issues which point to the importance of organizational buy-in include administrative buy-in, need for enforcement, and need for mindset change. This was established by analyzing the supportiveness of the organizational structure and the existence of ICT policies, strategies, equipments, internal systems, and other initiatives e.g. public

awareness campaigns. We also assessed the utilisation and integration of various organizational information systems in business activities.

We observed that although TRA has a considerable level of support for ICT at high administrative levels, the buy-in is focused on strengthening internal ISs (Qt23). Limited buy-in is given to the website. As a result it has received limited support and enforcement with respect to maintenance and marketing, hence less externally visible. This situation results into perceived low organizational preparedness by external stake holders including the citizens (Qt24).

TRA has a good internal ICT technical infrastructure and soft (i.e. policies, procedure, and practises) machinery. However, our analysis shows this machinery faces some problems. First, the available policies and strategies focus on the implementation, but not on the utilisation of ICT. Secondly, the available ISs are stand-alone. They neither talk to each other nor are they integrated to the website (TRA, 2005a, 2005b). Thirdly, the processes are unprepared to support the provision and handling of electronic business services. This situation creates an unfavourable environment for handling electronic transactions, especially email submissions. Consequently, machinery is perceived as inadequate and unprepared for such activities. It fails to attract the utilisation on external users. The quote below explains this observation.

> *You can simply see that even if they have a website, we still have to do a lot of things manually. So I do not have a reason to be using the website if I will eventually be required to go there physically. I better go directly to TRA instead of using the website. [T.R11]*

Citizen preparedness

Inability to afford the access associated costs, awareness of available services, importance of ICT skills, and preference for face-to-face communication were observed to be important for the adoption TRA website (Table 4-12).

The current means of accessing the website is through computers at working places (for corporate and employees), and through internet cafés (for traders, individual importers, and citizens). The access through corporate (organizational) facilities and

[11] http://www.tanpost.com/

internet cafés was explained to be due to inability to afford the associated access costs (equipment and connectivity costs). However, most of the employees do not have computers at home. This implies that if they had no access in their offices, they had to access the website through internet café, hence encounter costs related to access.

Table 4-12: User Preparedness

Subcategory	Code	Observation
Financial affordance	T1,2	The cost of access is higher for the majority to afford
Awareness of existing services	T3	TRA website is mostly known in Dar es Salaam, but less known in the regions
Need for IT knowledge and skills	T4,5	Users need computer skills to be able to access the website and the internet in general
Preference for face-to-face interaction	T6	People prefer on face-to-face as compared to electronic communication

The importance awareness of the available services was another important factor. While respondents perceive that the website and its services are not known to many, the TRA management recognises this problem. This was indicated by various awareness campaigns, in which the website was mentioned, printed, and communicated. Other factors include low computer skills of most Tanzanians, and preference for face-to-face communication (Qt30).

Service intrinsic issues

This category was signified by issues concerning online provided information, the website quality, general service issues, and the union effect (Table 4-13).

Table 4-13: Service Intrinsic Issues

Subcategory	Code	Observation
Information characteristics	T21-25	Useful information but complex and incomplete
Website characteristics	T31-34	The design, complexity, and reliability characterise the current website
Service characteristics	T26-30	General service issues include poor responsiveness, usefulness, trustworthiness, and convenience
Union Issue	T20	TRA is a union organization. However, it has limit of operation in Zanzibar. Equally, its services are respectively limited

The information provided on TRA website has varied characteristics. First, the information provides users with a number of useful tax-related issues. Tax information is derived from established tax laws. In addition downloadable information is provided

in PDF. These characteristics indicate the reliability and dependability of the provided information. Secondly, the website and its contents are written in legal English language, while the majority speaks Kiswahili (complexity). Thirdly, it is mainly used for information provision, and email is the only interaction means. No online submission or processing was observed (incompleteness), and emails were rarely responded to (poor response). The website is simple to use (simplicity), but it loads very slowly, and sometimes unavailable (website unreliability).

The union issue was invisible to most of the respondents. Many of the respondents were not free to talk about this issue. However, off-the-microphone TRA officials and other evidence (e.g. Saidi, 2008) indicates that there is a union effect. This is because TRA deals with all tax issues in the mainland. In Zanzibar, TRA deals with few union tax issues, while Zanzibar Revenue Board (ZRB) deals with all the remaining tax issues (URT, 1998).

From the above discussion we deduce factors related to the information provided (usefulness, reliability, complexity, completeness), and those related to the website (design, reliability) and the general problem of poor response to emails. We observe that the current utilisation is promoted by the usefulness of the information provided in the website; however, various information and the website characteristics are inadequate to encourage users to rely and frequently use the website (Qt25-27).

Inadequacy of access infrastructure

This factor was expected and is similar to the NECTA situation. The tendency of depending on institutional facilities and internet cafés indicates difficulties of accessing internet-based services. This was also observed by both the TRA management (Qt29) and user respondents (Qt30, 31). Table 4-14 presents a summary of this factor.

Table 4-14: TRA - Infrastructure Inadequacy

Subcategory	Code	Observation
Access infrastructure limitations	T7,8	Inadequacy of access infrastructure limits people from utilising nectar electronic services
Lack of computers	T9,10	Lack of computers inhibits people from using the internet and websites

Summary

The analysis on the adoption of the TRA online service delivered by means of a website are influenced by organizational and service related issues. Other factors include the low citizens' preparedness, and inadequacy of the country's ICT infrastructure. We observed that the current TRA organizational preparedness and the quality of service provided are not adequate to attract citizens to utilize the online services. Likewise the general citizens' preparedness and access challenges limit the majority of the citizens from utilising the online services.

As shown in Table 15, we established other issues related to the adoption of TRA website. We observed that TRA online services can not be complete without the participation of other partners with which TRA must work with. These include Tanzania Ports Authority, Tanzania Food and Drugs Authority, Tanzania Bureau of Statistics, Local Authorities, Ministry of Health and social welfare, ZRB, and MoFEA to mention a few. We also observed that TRA, as a government agency, has no authority to influence the partners to contribute to its online services (Qt28). Further, TRA can do little on issues such as citizen skills, affordability, and access infrastructure. We interpreted this phenomenon as a limit of organizational responsibility.

Further analysis suggest that, the *nature of the business* the organization has, may also have impact on the willingness of the people to obtain that service in electronic form (Qt29). We observe that, TRA's business is surrounded with lack of the voluntary tax-returning culture (Ambali, 2006, Ambali, 2004), tax evasion and corruption environment (Levin & Widell, 2007; Fjeldstad, 2003). We, therefore, suggest that fewer people will be attracted to use electronic services; instead, they will prefer face-to-face contact (Table 4-15).

Table 4-15: TRA - Other

Subcategory	Code	Observation
Influence limitations	T11	TRA needs to work with partners, however it has no authority of influencing the partners
Nature of business	T12	People are more comfortable to deal with tax issues physically and face-to-face manner

4.3.3 Factors influencing the adoption of MoFEA Website

The investigation of the factors influencing the adoption of the MoFEA website followed after the investigation and analysis of NECTA and TRA. Although at this stage we were

also open for new discoveries, we were more focused to the findings obtained from the previous two cases. We therefore generated a focused code list, coded the data, and then determined any new emerging feature. In the following section we present our findings and the observation on the relevance and new feature.

Organizational Preparedness

This category was established by analysing the initiatives of the organization, and adequacy of procedures and policy to support online working environment. One of the notable initiatives is the approval of the website management guidelines. The guidelines stipulate the responsibilities concerning online services specifically the email, online forums, and downloadable forms (MoF, 2007). This has allowed the management to appoint a fulltime webmaster to manage and develop the website. As a result, the website has become a comprehensive repository of information from the organization to the public. Other internal indicators include investment on internal systems (Appendix 11 B), and computer trainings for staff. We interpreted these initiatives as indicators of the intention of the management towards e-Government, hence *administrative buy-in.*

Although the administrative buy-in mentioned above is important, it is yet to permeate into other areas which are visible to external users. For example, limited efforts have been done to institute *adequate policies, business practices, and ICT utilization culture*. Poor communication of the website to the public provides another typical example of inadequate practise. The website is mainly communicated during trade fairs (e.g. DITF), which makes it known to few. Consequently, external users fail to see the electronic preparedness of the organization. One of the reasons mentioned is the administration's *improper mindset* concerning ICT (Qt34, 35).

MoFEA still adheres to traditional manual processing practises. Currently, the *dokezo* system coupled with traditional *bureaucracy* dominates information flow and processing procedures in the ministry. Limited recognition exists for electronic communication so that even the internal employee emails are not used for any formal communication. Additionally, email utilisation is discretional, because there is no formal or informal obligation for using them. This is also reflected on the provision of information to the public, because one is free to obtain the online available information by visiting the

ministry's offices *(lack of sanctioning)*. The following excerpt obtained from a vacancy advertisement evidences this situation.

Applications must be handwritten, supported by CVs, copies of Certificates or Certified Academic transcripts and two recent passport size photos reach to the undersigned on or before 30th October, 2008 (MoFEA, 2008).

In the preceding discussion we highlight important issues related to the preparedness of MoFEA. These include organizational buy-in (efforts, intentions and actions of the management), and procedural issues (policies processes, and practises). We observe that their strengths or deficiencies can be used to explain the current level of the adoption of MoFEA website (Table 4-16).

Table 4-16: Organizational Preparedness

Subcategory	Code	Observation
Organizational buy-in	M8	Internal efforts are not visible through online public visible initiatives
Processes, practises, policies, bureaucracy	M9	Adhering to traditional processing undermine the organizational preparedness

Citizens' preparedness

The initial respondents were identified with the help of MoFEA officials. They were suggested to represent groups of intended recipients of the online services. However, few had actually accessed the website prior to their participation in this study. Those who had used the website did so from their offices. The main reasons given were unawareness of the existence of the website, unaffordable cost of computers and internet connection, and preference to for physical communication (Table 4-17). In this case, the issue concerning the preference to face-to-face communication was further elaborated.

People are not used to use websites for government services. You may find that a computer literate person do use other websites but when it comes to contacting the government he goes directly to the government office (M.R4)

Table 4-17: Citizens Preparedness

Subcategory	Code	Observation
Financial affordance	M2	Inability to afford equipment and connectivity costs, results in to reliance on office and internet cafés for access
Unawareness of existing services	M4	The website is less known to intended users
Need for ICT Skills	M5,6	Respondents were computer literate, hence could use other websites. However, were also concerned on the skills of majority Tanzanians
Preference for face-to-face	M7,8	Electronic communication with private and international organization, is possible but not with the government

Service Intrinsic issues

As shown in table 4-18 below and appendix 7.1, most of the service issues concerning the service quality were observed to be important for determining the utilisation of the MoFEA website. These include the characteristic of information, website, general service, and the union issue. An interesting phenomenon was the lack of useful information for the ordinary people, e.g. progress on retirement benefits; instead, the focus is on speeches and budgets. Additionally, the information provided is difficult to use because it is written in English, while Kiswahili is the widely spoken language (Qt39). Other issues include information obsolesce and incompleteness.

The main issues emerged on concerning the general characteristics of service provided include usefulness, convenience, and responsiveness to user emails. Convenience indicates appreciation of delivering services through the internet. These issues explain why people would use the website. Contrarily, poor response to users' emails indicated another concern that may explain why people would not contact the organization online (Qt37).

The effect of the current union structure on e-Government was more interesting. While participants from Zanzibar indicated to be more attached to their government as compared to MoFEA (Qt39), the website had information bias to the mainland. In addition respondents from the mainland did not even know the existence of the Ministry of Finance in Zanzibar (MoFZ).

We do not say the information is only for mainland or for Zanzibar, but of course the information that we put focused on things that happen around here [MoFEA], not in Zanzibar because they also have their own ministry but they do not have a website. I was arranging that they also have their own (M.R11)

Table 4-18: Service Intrinsic Issues

Subcategory	Code	Observation
Information characteristics	M12-16	Information is characterised by obsolesce, complexity, incompleteness and low usefulness
Website characteristics	M20-22	Website design and reliability needs to be improved
Service characteristics	M17-19	Responsiveness, usefulness, trustworthiness determine utilisation
Fit in the union	M23	The website informed about mainland MoFEA, Zanzibar respondents were aware of the website, mainland respondents did not know about MoFZ,

Inadequacy of access limitations

This issue remained similar to the previous findings. As shown in Table 4-19, ICT networks deficiencies and computer unavailability makes people to rely on their organizational and internet cafés facilities. The situation is more critical for the people in the rural and remote areas.

Table 4-19: Access Limitations

Subcategory	Code	Observation
ICT network inadequacy	M1	ICT networks speed, coverage, and reliability are inadequate to encourage frequent website utilisation

4.3.4 Summary

In this section we have presented the factors influencing the adoption of the MoFEA website. We have observed that issues related to the preparedness of the organization, the preparedness of the citizens, service intrinsic issues, and the access limitation are relevant to explain the degree of the adoption of the MoFEA website.

From the service issues, the union factor emerges to be an important issue. This means that in implementing e-Government at MoFEA this issue can not be ignored. However, although MoFEA is a union ministry, it has a limited influence in Zanzibar. Instead, MoFZ is responsible for financial issues in Zanzibar. This is because MoFEA has some specific issues that it deals with in the union structure. This issue indicates the limit of line of responsibility.

Age of the users was a silent factor we observed (M3). Through observation, we established that, apart from diplomats, suppliers, and other non- and governmental officials, citizens who frequently visited the ministry were public sector retirees. They visited the ministry when making follow-ups of their retirement benefits. Therefore, there is a high possibility that the majority of the ordinary people who are potential to be beneficiaries of the MoFEA electronic services are the aged group. The implication here is that, if MoFEA wants to serve this group in electronic fashion, the service and channel of delivery will need to be critically considered to meet the need of such a group. We suggest User Age as an important factor for MoFEA website adoption.

4.4 Cross-case analysis

In the previous section we presented the within-case analysis whereby various issues influencing the adoption of individual e-Government initiatives were discussed. In this section, we compare the emerged issues across the three cases.

4.4.1 Organizational preparedness

This category emerged from the analysis of various organizational related factors that intended users evaluate when considering contacting a government organization electronically. The factors are divided into two main subcategories (Table 4-20); organizational buy-in and adequacy of internal policies, processes, and practises. Organizational buy-in comprises factors related to actions of the people (staff), while policies, processes, and practises comprises factors necessary for processing users' enquiries in the organization.

Observation across cases

The in Table 4-20 comparison shows that senior management buy-in for e-Government is present in all the three cases we investigated. This was observed through budget, policy, systems development approval, and structural adjustments. However, the buy-in was yet to trickledown to lower level management, hence it was not visible to the users. This observation is important because in their day-to-day activities, citizens interact more with operational and tactical level management in the government. Less contact is done with senior management. Therefore, it is imperative for the citizens to perceive that an organization as a whole is prepared to serve them through electronic means. It is insufficient to emphasize on internal betterment only. Instead deliberate actions that communicate a message of adequate preparedness need to be incorporated and visible to citizens.

The analysis of the adequacy of the current policies, procedures, and practises shows that none of the three organizations have the preparedness that could facilitate e-Government. While NECTA did not have any policy on ICT, TRA and MoFEA had some policies (Appendix 8.B). However, they were focused on guiding the development of the internal technical infrastructure. None of the policies were addressing, handling and processing public enquiries in electronic environment. In addition, both organizations adhered to the dominant *dokezo* system. They also did not recognise email

communication as a formal means of communication. This situation indicates the low organizational preparedness towards e-Government.

Table 4-20: Organizational Preparedness across Cases

Subcategory	Similarities	Differences
Organizational buy-in	Both organizational demonstrated considerable internal oriented buy-in of top management	• NECTA's buy-in is centred at the CEO level, but informal and less embraced by low level management • TRA has established and formal administrative buy-in, however less supportive to website based services • MoFEA has formal internal oriented buy-in, through not embraced organizational wide
Adequacy of internal machinery	• Processed, are dominated by the dokezo system and are manual • ICT policies are mainly internally oriented • Systems are standalone	• NECTA has no written policies • TRA has ICT policies, strategies, and emphasises on internal electronic processing • MoFEA has no ICT policies, but embrace internal electronic practises

4.4.2 Citizen preparedness

This category comprises issues that may influence a citizen, at individual level, to adopt e-Government services. Specific subcategories include affording to pay-for, need for ICT skills, awareness of existing services, and preference for face-to-face communication. Table 4-21 presents a summary of the citizen preparedness issue.

Observation across cases

The importance of affording the cost of accessing the internet was consistent across the cases. We term this category as *financial affordance*. This issue was more notable on the utilisation of NECTA website. This is because the majority of the users are students. Many students are young and still are dependants of their families or guardians. This forces the majority to rely on infrequent access through the cybercafés. For TRA and MoFEA, the target users are taxable and working class respectively. However, because of a low income, they can not afford the cost of the equipment; instead they rely on their office and cybercafés for access. The main service provided by NECTA is viewing examination results. This required only moderate ICT skills. Contrarily, the searching and downloading of information from TRA and MoFEA required more skills. This shows that as the sophistication of the website increases, the level of skills required to use them also required to increase. Citizens with adequate skills will be more confident to seek and obtaining government services through the internet, hence higher adoption.

Users' awareness was also observed to be an important factor in all the three cases. We observed that NECTA website is widely known. This contrasts with to MoFEA website which is limitedly known to even the intended recipients (e.g. retirees). Specifically, unawareness of the availability of specific services provided on the website may also result into low adoption. The NECTA situation provides an exemplary case. While there were other, though few, services (e.g. registration results and appeals), they were less known to our respondents. This indicates that the website is only for announcing of examination results. Otherwise, it received low utilisation in periods other than after announcing the examination results. Therefore, we observe that that adequate awareness will improve citizens' adoption of the services.

Table 4-21: Citizens Preparedness

Subcategory	Similarities	Differences
Financial Affordance	Low income is the main obstacle in all of the three cases	• NECTA serves mostly family dependent young students • TRA and MoFEA users rely on office facilities and internet cafés
Need for ICT skills	Need for ICT, especially computer skills was important across the cases	• NECTA provided mainly the viewing of examination results, this required moderate ICT skills • Searching and downloading information form TRA and MOFEA required more confidence on using ICTs
Awareness of existing services	Apart from general information, other specific services are still unknown	• NECTA website is well known country wide • TRA website is known, but mainly in Dar es salaam • MoFEA website is less popular especially to ordinary citizens
Preference for face-to-face	Face-to-face communication was observed as preferred in all the cases	-

Preference for face-to-face communication is a contextual factor that was observed in all the three cases. This factor was also observed by Mafu (2004). It suggests that the provision of government services electronically, especially self-services channels (Belanger & Hiller, 2006), will be challenged by the preference for oral and face-to-face communication in Tanzania. It is therefore likely that the current level of e-Government adoption is also contributed to by this cultural aspect.

4.4.3 Service intrinsic issues

Four categories of service related issues were identified to be important for the adoption of the case organizations' websites. These include information, website, general service characteristics, and fit in the union structure (Table 4-22).

Observation across cases

Table 4-22: Service Intrinsic Issues

Sub-category	Similarities	Differences
Information characteristics	Information incompleteness Information complexity due to use of English Information obsolesce (outdated) Information usefulness	NECTA provides seasonal information
Website characteristics	Complexity, design, reliability	MOFEA website is searchable
General service characteristics	Poor response to user inquiries The benefit of the nature of the internet (Usefulness/convenience)	-
Fit in the union structure	The services attracts users from both parts of the union	-

The main information-related characteristics identified in this study include incompleteness, complexity, obsolescence, and need for more usefulness. Information incompleteness was the most important factor across the cases. This may be because of the stage of evolution of the websites. Further, the use of English on the website contributed to undermine the ease of use of the posted information. This is because Kiswahili is the language that most of the citizens use in their daily activities. Infrequent updating of information was observed to undermine the up-to-datedness of the provided information. While NECTA mainly updates its online information during examination release periods, TRA and MoFEA do so after parliamentary sessions. On the other hand, the appreciation or concerns on usefulness of the available information indicate the importance of such a characteristic. A comparison of NECTA examination results (useful) against ministers' speeches (less useful) information exemplifies this importance. Though seasonal, the usefulness of the examination results attracted more users, while availability of ministers' speeches attracted fewer users.

Characteristics related to the websites include reliability and design. Website unreliability was indicated by the concerns on the frequent unavailability of the websites. For instance, concerns on the unavailability of the NECTA website during examinations results seasons indicated this issue. Likewise unsatisfactory level of design of both websites lauds the need for better designs that meet the expectations of the users.

As shown in the code lists general service issues encompass factors beyond information and websites characteristics. These may include need for more timely

responsiveness, service convenience, and need for privacy. These issues show that there are more considerations than information and website design. An issue such as poor response to email-submitted enquiries is a typical example. On the other hand, usage because of the convenience, and usefulness brought about by the internet technology suggests another overarching issue. We grouped these issues as general services issues. Accordingly, the general service issues that influence are responsiveness, usefulness, and convenience of using websites to obtain information from the government (QT17).

Although all the three organizations are URT organizations, TRA and MoFEA have competing counterparts in Zanzibar. We observed that respondents from Zanzibar were more aware of these union organizations as compared to their mainland counterparts. This issue reveals an interesting phenomenon. It suggests that the services implemented by the union organizations will attract more users from both sides of the union. We termed this issue as fitting in the union structure.

4.4.4 Inadequacy of access infrastructure

This issue was relevant in all of the three cases (Table 4-23). The issue may not be a case specific issue, but a country-wide and possibly a regional issue. This is because access related issues are not controlled by the case organization. Problems such as inadequate availability of computers and deficiencies of access networks are issues related to the country's infrastructure and economic situation. This situation plays a crucial role in accessing e-Government services and the internet in general. This issue may impact organizations (providers) as well as to the ordinary citizens (recipients).

Observation across cases

Table 4-23: Access Limitations

Sub-category	Similarities	Differences
ICT Infrastructure inadequacy	All cases are affected by the current status of inadequate ICT networks of the country	NECTA users rely heavily on cybercafés, while TRA and MoFEA users rely on their organizational facilities
Availability of computers	Computers are available in mainly urban areas, and the majority of the users do not have computer. this is not also a case issue	

4.4.5 Other issues

Several other issues were identified in this study. They include the *age of user*, and *organization context*. These issues were subtle in the statements of our respondents.

However, they were important for the adoption of e-Government in Tanzania. We explain and present our understanding of the issues in this section.

The *age* of the users can explain the differences in utilisation of NECTA and MoFEA websites. The majority of the users of the NECTA website are youth. This group mainly include youth of below 25 years of age (Bommier & Lambert, 2000). This group is more ICT daring, hence exposed to ICTs (computers, phones, and internet). This raises the possibility of using ICT-based services. Contrarily, MoFEA's intended users are adults and retirees. These people, especially the retirees, may be less ICT daring and unlikely to opt for electronic services. The age differences may play an important role in explaining the utilisation of NECTA against MoFEA websites. This inverse relationship between age and adoption of e-Government was also observed by Diminitrova and Chen (2006).

We also observed that the context of a government organization can have a significant role in influencing citizens' adoption of e-Government initiatives. We termed this issue *organizational context*, and we related it to two observed categories. The first category relates to what the organization is; we term this as the *nature of the organization and its business activities*. The second category relates to what a government institution can do. We labelled this as the *limit of responsibilities*. We elaborate these issues further.

The *nature of the organization and its business activities* was revealed when comparing the TRA and NECTA business environment. For TRA, the voluntary tax culture in Tanzania is yet to be realised. This makes this function to be surrounded by tax evasion, corruption and mistrust (Fjeldstad, Katera, & Ngalewa, 2008). In addition, late tax payment, which may be caused by poor responsiveness, may cost a tax payer a fortune. In such an environment people will prefer to obtain the government services in person. This is contrary to NECTA environment where candidates will voluntarily register, and attempt examinations for their personal benefit. NECTA, TRA, and MoFEA have a different nature and deal with different businesses. They are therefore perceived differently by citizens. Their electronic services are likewise perceived and attract citizens differently. We therefore suggest that the nature of organization and its business activities may have an impact on citizens' adoption of its electronic services.

Further, we noticed that the limit of organizational influence may also impact e-Government adoption. The limit of organization influence relates to statutory responsibilities that a government organization can execute. This is particularly important when e-Government initiatives need to involve more than one partner to be competed. We related and labelled this issue to *organizational autonomy* (Gil-Garcia, 2006). Organizational autonomy may not be obvious to the citizens. However, its impact is evident in other area such as incompleteness of information or services. For instance, the provision of complete services is the responsibility of an individual organization. However, it may be difficult to enforce service or information contribution amongst business partners in a respective value chain. Likewise, informing citizens about the availability of particular services is the responsibility of the respective organization. But, it is the duty of the central government to ensure that citizens know how to use ICTs. We therefore suggest that the understanding of the impact of the organizational limit of influence can facilitate how various adoption issues can be approached. The limit of organizational influence issue may also be useful for outlining the responsibilities of an organization from those of the central government.

The cross case analysis is summarised in Table 4-24 below. In this summary we interpret the influence of each category on the current adoption situation at each case. Categories observed to influence adoption positively are indicated with a (+). A (-) indicates categories with negative impact to adoption. We also indicate the observed situation of each subcategory in each case in a scale of low (L), medium (M), and high (H).

Organizational preparedness is determined by organizational-wide buy-in, and adequacy of processing machinery. For high adoption, these aspects need to be perceived as having high preparedness. However, they were low in both cases, hence exerted a negative impact on citizen adoption of the respective websites.

Citizen preparedness is determined by financial affordance, awareness of existing services, ICT skills, preference for face-to-face, and age of the users. For high adoption, financial affordance, awareness of existing services, and ICT skills need to have high preparedness, while constraints of preference for face-to-face, and age of

the users need to be low. Financial affordance was low across the cases. Awareness was high, and ICT skills were moderate at NECTA. These aspects were low at TRA and MoFEA. This contributed to higher utilisation of NECTA's website as compares to TRA and MoFEA's websites.

Table 4-24: Summary of Cross-Case Analysis

Adoption issues		Impact on adoption					
Category	**Subcategory**	**NECTA**		**TRA**		**MOFEA**	
Organizational preparedness	Organizational-wide buy-in	L	-	L	-	L	-
	Adequacy of processing machinery	L	-	L	-	L	-
Citizen preparedness	Financial affordance	L	-	L	-	L	-
	Awareness of existing services	H	+	L	-	L	-
	ICT skills	M	+	L	-	L	-
	Preference for face-to-face	H	-	H	-	H	-
	Age	L	+	H	-	H	-
Service intrinsic issues	Information quality	M	+	L	-	L	-
	Website quality	L	-	L	-	L	-
	General service quality	L	-	L	-	L	-
	Fit in the union	H	+	L	-	L	-
Access issues	Adequacy of ICT networks and availability of access requirement	L	-	L	-	L	-
Organizational Context	Organizational autonomy	H	-	H	-	H	-
	Nature of the organization and business	H	+	L	-	L	+
Degree of adoption		Seasonally high		Low		Low	

Key: Low (L), Medium (M), High (H), Positive impact (+), Negative impact (-)

Preference for face to face communication was high across the cases. This exerted a negative influence on the adoption of all websites. In addition, the age of the majority users (secondary school pupils) of the NECTA website was low. TRA and MoFEA users were tax payers and retirees who are generally adults. This situation favoured the utilisation of NECTA's website, and impedes high utilisation of TRA and MoFEA websites respectively.

Service issues were information quality, website quality, and general service quality aspects. These aspects need to have high quality to favour adoption. From the cases, information quality was moderate at NECTA, and low at TRA and MoFEA. This situation had a positive impact to the utilisation of NECTA's website, and negative to those of TRA and MoFEA's. Other services issues were low across the cases, hence jeopardized the adoption of the websites. In addition, the fit of NECTA's website in the

union structure was high and low for TRA and MoFEA. This situation had positive influence on the adoption of NECTA's website as compared to those of TRA and MoFEA.

High adequacy of access, ICT networks and availability of access requirements favours adoption of e-Government initiatives. However, these aspects were low across the cases. This is because of the current infrastructural situation of the country. Consequently, citizens are hindered from accessing ICTs and e-Government initiatives. This caused unfavourable environment for the adoption of the websites in both cases.

When the organizational autonomy is high, inter-organizational collaboration for e-Government is jeopardized. All cases demonstrated high organizational autonomy barrier. This may cause fragmented and of low quality e-Government initiatives and results in low adoption. In addition, the nature of organization and business to voluntarily attract citizens was high for NECTA, low for TRA and MoFEA. This means that TRA and MoFEA e-Government services are likely to attract less adopter as compared to NECTA.

4.5 Generic insights on e-Government adoption issues in Tanzania

Now that we have identified issues that influence the adoption of specific e-Government initiatives, we want to abstract and explain the issues in a more generic way. In this abstraction, we explain how issues from the case studies can be used to describe citizen adoption of e-government initiatives in Tanzania. Accordingly, we present our new understanding of our initial constructs we identified during the initiation phase (chapter 3). We also summarise the refined issues in Table 4-25 and Figure 4-1.

4.5.1 Insights on organizational preparedness

Organizational preparedness concerns citizens' perception regarding the extent to which government organizations appear to be prepared for e-Government. Initially we presented this issue as *government preparedness* Initial factors contributing to this issue were (1) administrative buy-in (2) adequacy of policies, and guiding standards, (3) adequacy of procedures, processes, and practises, and (4) the need for coordination. From the case studies we learned that citizens evaluate the preparedness

of individual government organizations. The evaluation results in perceived organizational preparedness to handle and process citizens' enquiries electronically. We hence re-labelled this issue as perceived *organizational preparedness.* We also understood that perceived organizational preparedness is the result of citizens' evaluation two key aspects; (1) visible actions and attitudes of people in a respective organization, and (2) adequacy on internal machinery towards electronic working environment.

Table 4-25: Summary of e-Government Adoption Issues in Tanzania

Refined issues	
Category	**Subcategory**
Organizational preparedness	Organizational-wide buy-in
	Adequacy of processing machinery
Citizen Preparedness	Financial affordance
	Awareness of existing services
	ICT skills
	Preference for face-to-face com
	Age
Service intrinsic issues	Information quality
	Website quality
	General service quality
Access issues	Adequacy of ICT infrastructure
	Availability of access equipment
Organization context	Nature of an organization
	Organizational autonomy

Actions and attitudes of organizational employees at all levels need to demonstrate that they accept and support e-Government. The actions and attitudes of senior as well as junior staff communicate an important organizational preparedness message to citizens. Citizens need to perceive that senior management demonstrate support, and are serious for e-Government. This needs to be reflected at all other organization levels whereby acceptance, apprehension, support, and enthusiasm are collectively geared in favour of e-Government. Otherwise citizens will perceive that the organization is unprepared to serve them electronically. This will discourage citizens' adoption of organizational e-Government initiatives. We term this aspect as *organization-wide buy-in.*

Adequacy of internal processing machinery relates to the expected organizational preparedness in aspects of process, procedures, practise, coordination, and relationships within an organization. E-Government initiatives from an organization with

ill-prepared internal processing machinery will attract low citizen adoption. Hence, citizens need to perceive that the internal organizational machinery of a government organization is prepared for electronically processing their enquiries. Otherwise citizens will find it more relevant to seek government services physically, hence low e-Government adoption.

Effect on adoption of e-Government

Citizens' evaluation of the organizational preparedness determines their perceptions about the extent to which the organization is prepared to serve them in the electronic fashion. Inadequate preparedness is indicated by deficiencies in either management actions or the internal processing machinery. Adequate preparedness requires strength in both aspects. Citizens' perception on inadequate organizational preparedness will cause low adoption of e-Government initiatives. Adequate preparedness will promote a high degree of adoption of the initiatives.

4.5.2 Insights on citizen preparedness

Citizen preparedness encompasses aspects that explain the extent to which citizens are confident to seek and utilize government electronic services. Initial factors defining this issue are (1) financial affordance (financial power to acquire and pay for electronic services*)* (2) awareness of e-Government and ICT skills, and (3) preference for face-to-face communication. These aspects were confirmed in the cases studied. However awareness of e-Government and ICT skills emerged to be two separate factors. We observed that it was possible for ICT skilled citizens not to be aware of existing e-Government services. Likewise e-Government aware citizens may not necessarily have adequate ICT skills. This shows that awareness of existing e-Government initiatives is independent of possession of ICT skills, and the vice versa is also relevant. In addition, *age* of intended users emerged to be a new revelation in this category.

The citizen preparedness issue suggests that inadequately prepared citizens are unlikely to adopt e-Government initiatives. Inadequately prepared citizens have limited awareness of existing e-Government services, inadequate ICT skills, and can not financially afford to obtain government electronic services. Further, they prefer face-to-face contact with the government, and tend to be old. This suggests that high adoption of e-Governments services will be likely if citizens are prepared for e-Government.

Alternatively, e-Government initiatives need to be designed to accommodate the prevailing preparedness situation of the citizens.

Effect on adoption of e-Government

Citizens' preparedness can be used to explain the current level of e-Government adoption in Tanzania. Inadequate citizen preparedness is a result of low affordability, low ICT skills, high unawareness, and high preference to face-to-face communication. When there is inadequate preparedness, adoption will also be low. This category reveals the importance of various user centred issues that may influence citizen to adopt e-Government.

4.5.3 Insights on services intrinsic issues

This issue relates to citizens' perceptions about the properties of e-Government initiatives offered to them. Initial results suggested that service quality and fit into the Tanzanian union structure were the key determinant in this issue. From the case studies we learned that important service quality elements in Tanzania are (1) information quality, (2) website quality, and (3) generic service quality aspects. In this study we used government websites which were mainly informational. We interpret information and website quality to indicate content and system quality. Respectively, generic service issues include timely responsiveness, usefulness, and convenience which contribute to the value of an electronic initiative. Citizens will adopt e-Government initiatives which meet and exceed their expectations. They need to perceive that contents, systems, and generic properties (e.g. responsiveness) satisfy their expectations. Otherwise they will opt for seeking government services physically. This will result into low adoption of e-Government initiatives.

Fit in the union was another factor in the service intrinsic issue. This issue suggests that services offered by organizations which serve both sides of the union will attract more adopters. However, we observe that this issue is more related to the nature of organization and its business. We hence re-categorise it to that issue in section (4.5.5).

Effect on the adoption of e-Government

Service-intrinsic issues suggest that the deployment of e-Government services will require a careful consideration of various general and contextual service related factors. These factors concern properties of the contents (e.g. information), and

channels through which the content is communicated (container). General issues such as response and the contextual fitting are also important. We observe that low quality of information and channels will contribute to low adoption degree of e-Government initiatives.

4.5.4 **Insights on access issues**

Access issues refer to the way citizens get access to e-Government initiatives. The initial results showed adequacy of ICT infrastructure and lack of utilisation of available infrastructure were the key issues. Results from case studies showed that adequacy of ICT infrastructure and availability equipment for accessing e-Government services. Adequacy of ICT infrastructure relates to the availability and coverage of telecommunication and supporting infrastructure such as electricity and roads. Availability of ICT equipment explains the adequacy of equipment, especially computers, for accessing e-Government.

An inadequate access situation will result into low e-Government adoption. From the cases we observed that this situation is caused by the inadequacy of ICT networks and supporting infrastructure, and the unavailability of access of appropriate access equipment. For high adoption the infrastructure situation will need to be improved. Alternatively, mitigation strategies for alternative connectivity (mobile phones, TV, and radio) can be more appropriate to tackle the situation. Otherwise fewer citizens will adopt e-Government initiatives.

Effect on the adoption of e-Government

Inadequacy of access infrastructure plays an important role in the adoption of e-Government. Citizens need to have means of accessing electronic services intended for them. With improved access, citizens will be encouraged to seek and utilize government electronic initiatives. However, inadequate access to electronic services will discourage citizens to use the services. This may result into low adoption of e-Government initiatives.

4.5.5 **Insights on organization context**

This issue comprises two categories, namely the nature of the organization and its business, and organizational autonomy. The nature of the organization and its business was a new revelation during the case study phase. We learned that different

organizations are perceived differently by the citizens. This also influences citizens' adoption of their e-Government initiatives. For instance, a website by the army will attract fewer adopters as compared to NECTA website. This is because fewer citizens are normally attracted to the activities of the army[12]. Contrarily, NECTA's business activities are generic and are voluntarily sought by many people. Accordingly, citizens are likely to seek and utilize initiative by NECTA as compared to the army website. Likewise, initiatives by the Zanzibar Government will attract people differently as compared to those by the Tanzania Government (fit in the Union). Government organizations need to understand that what they are and do influences citizen adoption of their electronic initiatives.

Organizational autonomy was another new category during case studies. This issue was subtle during our investigation. However it emerged as an explanation of the structural limitation on various government organizations. Each government organization has its own statutory mandate, budget, and limit of authority. Hence, it can only deal with its e-Government initiatives that are under its jurisdiction. It is therefore possible to strategize on some aspects but limited on other. For instance, an organization can be responsible for its organizational preparedness and intrinsic issues of its e-Government initiatives. However, it may not be possible for an organization to deal with citizen preparedness and infrastructural situation of the country. Such issues will require joint efforts of the central government. Likewise an organization is responsible for the quality of its services (e.g. completeness), but is limited on what it can do to improve the ICT skills of the citizens.

Effect on Adoption of e-Government initiatives

Organizational context may have an important role in the adoption of e-Government. Based on their statutory nature and services they offer, government organizations traditionally attract citizens differently. This can also be the case in the electronic environment. E-Government initiatives by government organizations which attract many citizens in the traditional way, will also receive higher adoption. Likewise, organizations which will successfully overcome the limits of their autonomy may provide services which are more likely to meet user expectations. This may promote adoption amongst the citizens of Tanzania.

[12] http://www.tpdf.go.tz/sw_index.html

4.6 E-Government adoption in Tanzania: a view on the problem

We have abstracted and discussed various issues potential to explain citizen adoption of e-Government initiatives in Tanzania. We now describe the problem that implementers of e-Government initiatives face when planning to implement citizen-focused e-Government initiatives. We explain the problem with respect to the challenges posed by the five issues we presented previously.

- Implementers of e-Government initiatives need to ensure that citizens will perceive that government organizations are prepared to serve them through electronic means. Currently, this is not the case in Tanzania. Citizens still perceive that government organizations are oriented towards serving them through physical contact. In this situation, citizens are unlikely to be encouraged to choose electronic channels as their first means to contact government organizations.
- There are two possible ways of understanding the problem regarding the preparedness of citizens. First of all, the majority of the citizens in Tanzania are inadequately prepared to receive government initiatives electronically. Secondly, the existing e-Government initiatives are not designed to accommodate the current preparedness situation of the citizens. However, citizens are expected to overcome their individual situations and seek and adopt electronic government services. Nevertheless, few citizens are able to do so; therefore the initiatives will attract fewer adopters. These two aspects pose a challenging environment for citizens to adopt e-Government initiatives.
- To establish a high adoption rate, the quality of e-Government initiatives must meet and satisfy the expectations of the citizens. The quality of the current e-Government initiatives is unsatisfactory. As a result, citizens are more comfortable obtaining the services at the government offices. This situation results in a low adoption rate of electronic government services.
- The majority of the citizens does not have adequate access to e-Government initiatives. We will describe this issue in two dimensions. First of all, the ICT networks and the related infrastructure in Tanzania are not sufficiently adequate to allow more citizens to seek and utilize electronic services. Secondly, the services are designed to be accessed mainly through computers, but the majority of the citizens does not have access to computers. Consequently, many citizens are excluded from access to e-Government initiatives. The consequence is a low adoption rate.

- In Tanzania, the organizational context can influence adoption in two ways. First of all, each government organization has its own statutory business nature and services offered to citizens. Therefore, e-Government initiatives of organizations that attract many citizens in face-to-face fashion are likely to receive a high degree of adoption. Secondly, government organizations have a limited autonomy. This may influence the way they offer their services to citizens. In other words, organizations that will be constrained by their statutory autonomy may not be able to influence other aspects, especially the quality of electronic services. Consequently, the quality of electronic services may be low. This may result in a low adoption degree of related initiatives.

The issues we discussed above highlight important challenges that hamper citizens to adopt e-Government initiatives in Tanzania. Inadequacy in these issues may cause problems with the adoption of e-Government initiatives by citizens in Tanzania. To enhance the adoption of e-Government initiatives, implementers require adequate strategies to overcome the challenges posed by the issues. Unfortunately, currently, no guidance is available in facilitating e-Government and in designing citizen-adoptable e-Government initiatives in Tanzania. This situation needs to be addressed. Otherwise, the initiatives will still be challenged by these aspects, will receive a low degree of adoption, and will eventually fail. As mentioned earlier (chapter 1), the failure of e-Government initiatives have costly implications for the government as well as for taxpayers and other sponsors.

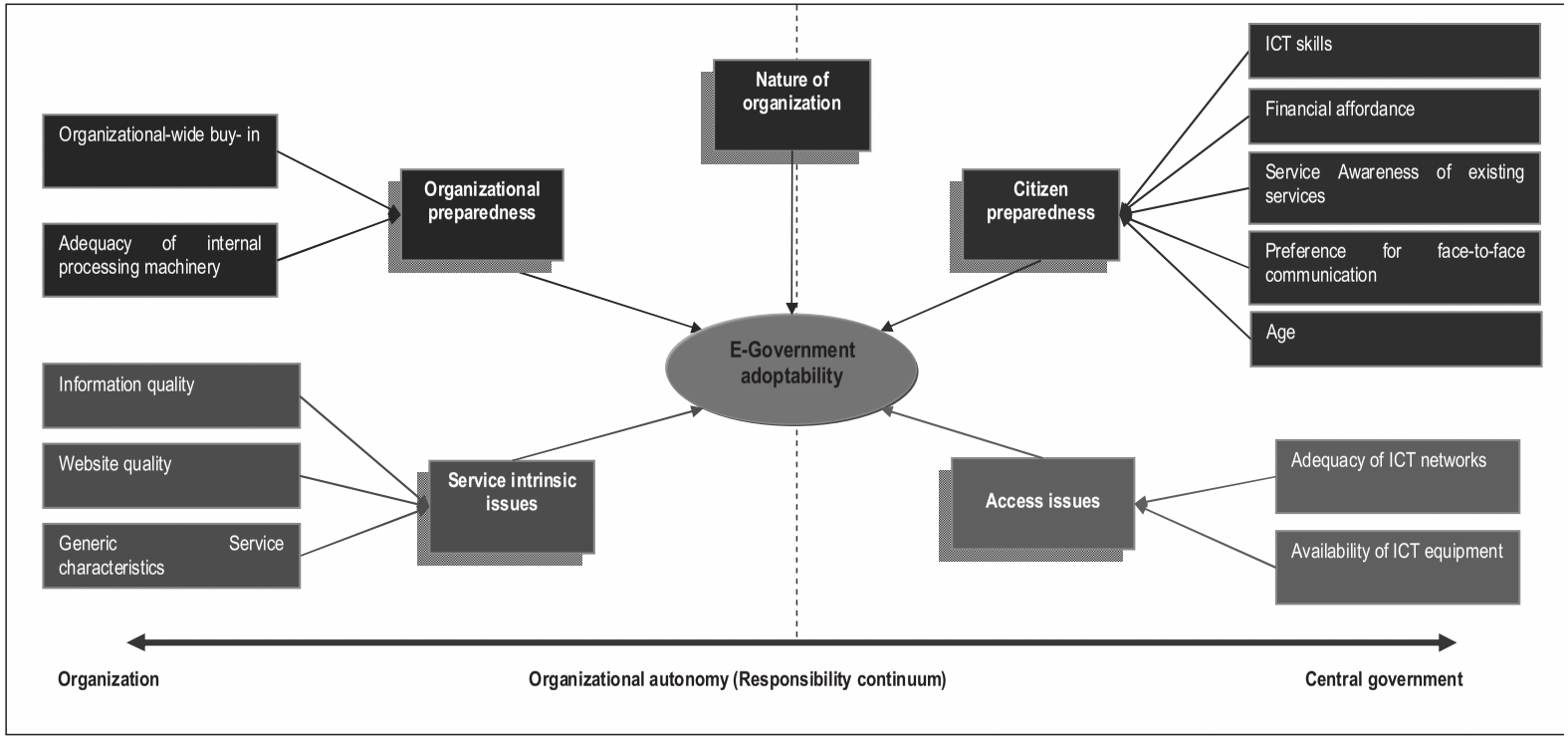


Figure 4-1: E-Government Adoption Issues in Tanzania

4.7 Summary

In this chapter, we have presented the process and the results of the second phase of this study. Our main purpose was to gain an in-depth understanding of e-Government adoption in Tanzania. This was important to be able to describe the problem regarding citizen adoption of e-Government initiatives in Tanzania. Accordingly, in this phase, we aimed to study issues influencing citizen adoption of e-Government initiatives in Tanzania. We started with the concepts we obtained during the initiation phase as our initial lens (chapter 3). We analysed the adoption of three e-Government initiatives and established five main issues underlying the adoption of e-Government initiatives by citizens in Tanzania.

In Figure 4-1, we demonstrate that the adoption of e-Government initiatives in Tanzania is determined by (1) organizational preparedness, (2) citizen preparedness, (3) service-intrinsic issues, (4) access issues, and (5) organizational context. Organizational context must be understood as the nature of the organization and organizational autonomy. We define organizational autonomy as a continuum of responsibilities. This aspect influences the adoption of e-Government initiatives through other factors identified in this study. The diagram shows that, due to organizational autonomy, aspects such as perceived organizational preparedness and service-intrinsic issues are the sole responsibility of individual government organizations. Citizen preparedness and adequacy of access are mainly the responsibilities of the central government (URT). Any challenge requires solutions balancing between the two extremes.

Currently, the issues we identified cause an unfavourable situation for citizens to adopt e-Government initiatives. If unaddressed, this problem may contribute to the failure of e-Government initiatives in Tanzania. In chapter 5, we will recite this problem. We then develop and present our solution to this problem.

Chapter 5
Enhancing citizen adoption of e-Government initiatives

In the previous chapters, we presented the situation concerning the adoption of e-Government in Tanzania. We established various issues underlying citizen adoption of e-Government initiatives in Tanzania. We also described the problem concerning the low adoption rate of e-Government initiatives in the country. In this chapter, we will present the activities of the third phase of this research. Based on the results from the case studies, we will present a solution for enhancing citizen adoption of e-Government in Tanzania. We will discuss the design requirements of our proposed solution. We will also discuss the procedures for applying the solution in the Tanzanian context. Finally, we will elaborate upon the measures to be taken for further development.

5.1 Introduction

In chapter 4, we presented the activities of the second phase of this study. By means of explorative case studies, we derived the main issues underlying the adoption of e-Government initiatives in Tanzania. From the case studies, we learned that the adoption of e-Government initiatives in Tanzania is a multidimensional issue. Various factors contribute to influencing citizens to either adopt or reject e-Government initiatives. The factors range from organization-related issues, citizen preparedness and characteristics of the initiatives, to access to the initiatives. Adequacy or inadequacy in such issues determines the extent to which citizens will adopt e-Government initiatives in Tanzania. In chapter 4, we observed that these issues are still insufficiently adequate in Tanzania. This causes an unfavourable condition for citizens to adopt e-Government initiatives in this country. As a result, the initiatives attract few adopters and experience a low adoption problem.

Now that we have clarified the problem, the low degree of adoption of e-Government initiatives, we needed to find a way to address it. In this chapter, we present our solution for addressing the problem of the low adoption rate of e-Government initiatives in Tanzania. Our solution aims to provide a way to enhance citizen adoption of the initiatives in Tanzania. In this way, we contribute to avoiding the failure of e-Government initiatives in Tanzania. To achieve our aim, we start with elaborating upon the requirements of our intended solution. More specifically, we discuss the issues that

needed to be considered when designing the intended solution. We use the results and observations from our case studies (chapter 4) to create the solution. Finally, we present our solution and discuss its current status. We present these issues in the following sections.

5.2 Requirements for a solution for enhancing e-Government adoption in Tanzania

According to Peffers et al. (2008), it is important to identify issues that need to be considered when designing a new artefact. This is useful when developing a solution that fits an identified problem (Hevner, 2007). The Concise Oxford dictionary (Oxford, 2009) defines a *requirements* as 'a need' or 'something specified as compulsory'. In this study, we have identified the issues that determine the adoption of e-Government initiatives. These issues provide us with compulsory conditions (requirements) that must be met to achieve a higher degree of citizen adoption of e-Government initiatives in Tanzania. Specifically, we consider the objective, context of application, and intended users of the solution. We present each of these issues in the following discussion.

5.2.1 The objective of the solution

The objective of a solution relates to what a new artefact is intended to achieve (Peffers et al., 2008). This is an important consideration during the design process of a new artefact as it helps to focus on effectively addressing the business problem identified in a particular context. The objective of our envisioned solution is to enhance the citizen adoption of e-Government initiatives in Tanzania. That is, by applying the solution, it should be possible to effectively identify, design, develop and deploy e-Government initiatives that are likely to be adopted by citizens in the country. This can be achieved by developing a solution that helps to address the issues identified in this study (4.6). Following Laere (2003) we interpret the issues as dilemmas that governments face when designing citizen adoptable e-Government initiatives (Table 5-1). In order to enhance citizen adoption of e-Government initiatives Tanzania, the solution should inform governments on how to overcome the challenges of (1) organizational preparedness (2) citizen preparedness (3) service intrinsic issues (4) access issues, and (5) organization context.

Table 5-1 Dilemmas on Enhancing Adoption of e-Government Initiatives in Tanzania

Dilemma	Description
Perceived organizational preparedness	How can government organizations enhance their organizational preparedness in favour of e-Government?
Citizen preparedness	How can government organizations overcome the challenges posed by inadequate citizen preparedness to enhance the adoption of their e-Government initiatives?
Service intrinsic issues	How can government organizations improve the quality of their services intrinsic issues to promote e-Government adoption?
Access issues	How can government organizations overcome access challenges in favour of e-Government?
Organizational Context	How can government organizations overcome the challenges of their organizational contexts in favour of e-Government?

5.2.2 Application context

The environment in which our solution will be implemented is another important aspect. In chapters 1, 2, and 4 we highlighted the context of e-Government in Tanzania. We explained that e-Government relates to the application of ICT in the government sector (1.1). The public sector is intended to provide services rather than to make profit. It is also characterized by politics, bureaucracies, and personal interests (Heeks, 2006). We also explained that being a developing country, Tanzania may be facing many e-Government implementation challenges. In section 2.4 we explained that important aspects are the shortage of skilled and experienced personnel as well as financial resources, and the novelty of e-Government. In addition, in section 4.5, we noted that in the Tanzanian context, e-Government initiatives are identified, designed, and deployed by individual government organizations. Accordingly, efforts to enhance the adoption of initiatives are relevant at that particular level.

The above issues highlight important application environment issues that our solution needs to fit into. Our solution should be applicable to in the public sector in Tanzania. It should also be usable in a context where resources such as funding, skills and experience are still insufficiently adequate. In addition, the solution should be usable by individual government organizations in their efforts to enhance the adoption of their e-Government initiatives.

5.2.3 Users

Another consideration concerns the intended users of our solution. This aspect was important because it helps to incorporate the characteristics of the intended users in our design process. In section 4.2.2 we highlighted various entities responsible for

implementing e-Government initiatives within our case organizations. Using the Stakeholders Identification Method (Boonstra, 2010), we were able to identify various actors and their roles in e-Government in Tanzania (Appendix 13B). We group the actors into two main groups; *implementers* and *citizens* (Table 5-2). Implementers of e-Government are those people who are responsible for developing and deploying e-Government initiatives for citizens. They have the responsibility to identify, develop, manage, operate, and advocate (promote), and sponsoring the initiatives.

Table 5-2: Actors in the Adoption of E-Government in Tanzania

Actor		Role	Examples
Implementers	Internal	To initiate, develop, operate, maintain and sponsor initiatives	Chief executives (NS1; TS3; MS1), internal directorates and departments (NS2-3,TS4-6; MS2-4)
	External	To sponsor, advocate, support and evaluate e-Government	Parent government ministries (NS4, TS1) and national coordinators and sponsors (TS2), partners (NS5; TS7)
Users of e-Government initiatives		To adopt and use e-Government initiatives	Students (NS7), tax payers (S8), pensioners (MS6)

We further categorize implementers into internal and external implementers. Internal implementers include the people within the government organizations. Examples of internal implementers can be chief executive officers, ICT department, and other collaborating departments or directorates. External actors are people who are not part of a particular government organization, but who participate or influence the processes of e-Government initiatives of that organization. For example, the Ministry of Education and Vocational Training and PoPSM are not part of NECTA's management. However, they influence e-Government initiatives at NECTA through accountability, funding, and coordination at a national level. Other actors include consultants, and partner organizations. Citizens are the recipients of e-Government initiatives. Their role is to adopt and utilize e-Government initiatives. Each organization has its target users. For instance, NECTA focuses on examination candidates, their teachers, guardians, and parents, and other education stakeholders. TRA focuses on tax payers, clearing agents, and other government institutions. The users of MoFEA website are divergent, but pensioners are a typical example.

The solution we propose is intended to be utilized by the implementers of e-Government initiatives we mentioned above. AlthoughThough they may have different roles (e.g. owners, developers, sponsors, partners, and consultants). They share a

common goal of deploying adoptable e-Government initiatives. They are thus involved in making decisions that matter (Keen & Sol, 2008) in implementing e-Government initiatives. Accordingly, we observe that our solution needs to facilitate the implementers to make sound decisions leading to the deployment of adoptable initiatives. Specifically, it should be possible for the various e-Government implementers to utilize the solution for deploying adoptable e-Government initiatives.

5.3 A solution for enhancing e-Government adoption in Tanzania

At this stage we have described the problem concerning e-Government adoption in Tanzania. We have also identified the issues that we needed to consider when designing our solution. Now we need to develop an approach to facilitate the overcoming of the issues. From March and Smith (1995) we observed that developing a method for enhancing adoption of e-Government initiatives in a form of guidelines was a fitting solution. This approach have been used in other fields such as enhancement of online accessibility (W3C, 1999), and is applicable in the private as well as the public sector (e.g. AGIMO, 2009). Likewise, we observed that through guidelines it is be possible to propose ways to address the dilemmas we presented in 5.2.1. Addressing of the dilemmas is expected to enhance the citizen adoption of e-Government initiatives in Tanzania. Guidelines are also possible to be used in the Tanzanian pubic government (5.2.1). In addition, guidelines are possible to be used and facilitate a wide range of e-Government implementers in Tanzania (5.2.3).

In designing the envisioned guidelines, we utilized various sources to inform us with relevant propositions. We use insights from the case studies results (Chapter 4), and from existing literature to develop propositions on how each requirement can be overcome. Whenever literature does not provide us with comprehensive propositions, we also apply our knowledge and experience in the area of e-Government. According to French (1990), this approach is known as the application as *received wisdom*.

5.3.1 Structure of the guidelines

The structure of the guidelines for enhancing citizen adoption of e-Government initiatives resembles that of the Web Accessibility Guidelines 1.0 (W3C, 1999). We adopted this structure to introduce the tracing and reporting conformity to the proposed guidelines. Accordingly, each guideline bears three important aspects. First, each

guideline contributes to a particular adoption issue identified in our research. That is, each adoption issue and associated sub-issues are addressed by a specific guideline. Further, each guideline has a set of checkpoints which highlight how it can be achieved. Secondly, the guidelines and their respective checkpoints are numbered. This allows their identification during all stages of the guidelines application (e.g. stakeholder discussion). Thirdly, the guidelines are written using action statements. This helps emphasize the actionable strategy that must be observed to approach a particular issue. In addition, we observed that such a structure will accommodate the requirements we discussed in section 5.2.

The guidelines for enhancing citizen adoption of e-Government initiatives are not prescriptive and are not intended to be a new Information Systems Development Methodology (ISDM) for e-Government. ISDMs may provide steps and tools to establish an information system. The set of guidelines we present provide information in the form of checkpoints to assess the adoptability of e-Government initiatives. The guidelines are independent of any ISDM. This provides ample flexibility for utilising the guidelines alongside with any formal ISDM chosen by a government organization.

5.3.2 Applying the guidelines for enhancing e-Government adoption

The proposed guidelines can be applied ex ante and ex post. Ex ante application is possible when a government organization wants to identify, plan, and deploy e-Government initiatives. The guidelines can be used to facilitate the development of new e-Government initiatives. They can be used to assess proposals, designs, technologies and the deployment strategy of the initiatives. This will facilitate to improving and predicting the adoption likelihood of new e-Government initiatives. This can help identify and prioritize issues that they need to be addressed.

Ex post application means using the guidelines to evaluate existing e-Government initiatives. This will help to highlight adoption success or failure issue of existing e-Government initialise. This will provide implementers with information on the issues that need to be observed or addressed to improve the adoption of the e-Government initiatives.

In the application of the proposed guidelines we adopt the auditing approach (Hoyle, 1994). In this approach implementers assess the conformity of an e-Government initiative against each guideline. Conformity establishes whether the implementer(s) have considered various dimensions established in the checkpoints. Conformance can be indicated by assigning a 1 while non-conformance can be indicated by a 0. This will help implementers to identify and prioritize the issues that need their attention for the adoption of respective e-Government initiatives.

5.3.3 Guidelines for enhancing citizen adoption of e-Government initiatives

In this section we present the guidelines for enhancing e-Government adoption in Tanzania. We derive the guidelines to address the dilemmas we highlighted in Table 5-1. In each dilemma, we propose a solution. Accordingly, we propose 13 guidelines and their respective checkpoints (Table 5-2).

Addressing organization preparedness

Perceived organizational preparedness is the result of citizens' evaluation of organization-wide buy-in and the adequacy of the processing machinery for e-Government. Citizens will be more likely to adopt e-Government initiatives if they perceive that the providing organization is adequately prepared to serve them electronically. Perceived organizational preparedness is determined by (1) organization-wide buy-in, and (2) adequacy of the internal processing machinery. An important dilemma here concerns the ways in which government organizations can enhance their perceived organizational preparedness in favour of e-Government. Ensuring adequate perceived organizational preparedness requires guidelines for securing organization-wide buy-in and for addressing the adequacy of the processing machinery. In this study, we have explained that issues that determine the adequacy of organization-wide buy-in are the need for incentive/enforcement, a change of mindset, administrative buy-in, and coordination. The adequacy of internal processing machinery requires supportive policies, practices and processes, and internal coordination.

In order to foster organization-wide buy-in for e-Government initiatives, an effective internal marketing strategy is mandatory (Holmes, 2002). Accordingly, we wish to emphasize measures that will ensure effective communication and involvement of organization-wide stakeholders. This approach has also been adopted by the

Australian Government (Information Management Office, 2004) and has been suggested by other researchers (Holmes, 2002; Ndou, 2004; Reddick, 2005; Timmers, 2000). Accordingly, we propose the following guideline.

> **Guideline 1:** Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders.

From the literature (Bhatagnar, 2004, p. 62; Gil-Garcia & Pardo, 2005; Kamal, 2006; Lallana, 2008; Owei, Maumbe, & Rhyn, 2006; OECD, 2005, pp. 38-9; Wang, Doong, & Lin, 2007; West, 2004), we have synthesized various focus measures that may cultivate organization-wide buy-in. We observe that organization-wide buy-in can be achieved through (1) appointing an internal champion to spearhead the initiatives, (2) conducting awareness and branding campaigns, (3) demonstrating the visible benefits to internal stakeholders, (4) developing a sustainable coaching programme, (5) improving stakeholder involvement, and (6) providing incentives and/or sanctions for promoting electronic communication in order to encourage the internal ICT utilization culture.

We propose guideline 2 to facilitate decisions concerning the adequacy of internal processing machinery. This guideline emphasizes the importance of ensuring that policies, processes and practices are revised or designed to support e-Government.

> **Guideline 2:** Ensure that policies, practices, and internal business processes support and formalize electronic communication.

Propositions made by other authors (e.g. Bhatagnar, 2004, p. 62; Gil-Garcia & Pardo, 2005; Kamal, 2006; Ndou, 2004) can be used to achieve these guidelines. Accordingly, we propose the following checkpoints; (1) reviewing of legal, regulatory and process frameworks, (2) improving internal ICT skills, and (3) promotion of interdepartmental collaboration.

Addressing citizen preparedness

In this research citizen preparedness refers to issues influencing adoption of e-Government initiatives at an individual level. The issues identified under this category include affording to pay-for services, ICT skills, awareness of existing services, preference for face-to-face communication, and the age ranges of the intended users. As these issues are diverse, various guidelines are proposed. The preparedness of the

citizens influences their willingness to adopt e-Government initiatives. Accordingly, government organizations must address the dilemma related to overcoming the challenges posed by inadequate citizen preparedness in order to enhance the adoption of their e-Government initiative.

We observe that it is the duty of the central government to improve the economic well-being of the citizens (UN, 2008). This process may take long. In addition, it is not the responsibility of individual government organizations to raise the ICT skills of their citizens. We observe that individual organizations are required to be innovative to deliver e-Government initiatives that fit the existing citizens' situation. To ensure that citizens can financially afford e-Government initiatives, we propose guideline 3. This guideline emphasizes delivering e-Government services through multiple channels (Millard, n.d., OECD, 2005, pp.22-23). Observing this guideline will not only help to reduce access cost, but will also allow citizens to utilize available and affordable equipment to access government electronic services. This will improve and widen access to government services that are delivered electronically.

Guideline 3: Provide e-Government services through multi-channels

Priority areas should include deploying e-Government initiatives that can be accessed through channels that are locally widely available. In the Tanzanian context, possibilities include making use of the potential of mobile phones, radio and television. For instance, in June 2009, Tanzania had approximately 16,051,647 mobile phone subscribers (TCRA, 2009). This is equivalent to 40% of about 40 million Tanzanians (NBS, 2009). Therefore, employing the internet as the only electronic channel for delivering e-Government services may limit citizens with alternative channels, such as mobile phones, to access e-Government services. However, incorporating the potential of mobile phones, more citizens may gain access and use the electronic services. In addition, efforts should be made to lower the transaction costs.

An intentional marketing strategy (Pilling & Boeltzig, 2007) must be adopted. This will facilitate raising citizen awareness on the available e-Government initiatives and services. We therefore propose guideline 4. This guideline has a similar theoretical grounding as guideline 2 above. However, guideline 4 is externally oriented. It is

intended to advance and accelerate citizen awareness of the available e-Government services.

Guideline 4: Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally.

To follow this guideline, a government organization must observe a number of issues. Dovetailing with Holmes (2007), we propose the following specific checkpoints: (1) delivering services highly demanded by the citizens, (2) conducting sustained awareness and branding campaigns, (3) demonstrating visible benefits/success, and (4) involving stakeholders, particularly citizens, during the inception and development of the initiatives.

Government organizations need to overcome the challenges posed by inadequate ICT skills. We therefore propose guideline 5. This guideline emphasizes ensuring simplicity of the content and technologies used in e-Government initiatives (Garcia, Maciel & Pinto, 2003). We observe that simplicity will allow more people to use electronic government services.

Guideline 5: Ensure simplicity of contents and technologies used in delivering e-Government services.

We observe that simplicity can be achieved through (1) improving the ease of use of content, (2) delivering services by the multichannel strategy (Bhatnagar, 2004; Wangpipatwong, Chutimaskul & Papasratorn, 2008). We also observe that, with respect to the level of ICT skills in Tanzania, providing a help facility (online as well as offline) is imperative. This will allow citizens with a low level of ICT skills to learn to use e-Government initiatives (Cullen & Hernon, 2004).

Government organizations need to overcome the challenges posed by the preference for face-to-face communication. We understand that this cultural aspect will take time to change. Therefore, we propose that organizations should aim to prioritize initiatives that reduce the need for citizens to interact face to face with public servants. This will allow citizens to become familiar with receiving government services electronically.

Guideline 6: Promote the ability to receive public services without having to interact with members of the service provider's staff.

Following Cullen and Hernon (2004) and Thomas and Streib (2003), we propose that government organizations need to (1) increase the service options that citizens can access electronically, (2) provide incentives, and (3) formalize and prioritize electronic communication. These actions will help encourage citizens to opt for electronic means as their new way of contacting the government.

Because of the potential impact of age on the adoption of e-Government, we propose guideline 7. It is imperative for government organizations to understand the age categories of the targeted citizens of their electronic services. In these issues, users from different age groups may differ in their service needs and utilization behaviour. It is therefore important to identify user profiles and customize e-Government services to different age groups. We derive the following guideline from Morris and Venkatesh, (2000).

Guideline 7: Determine user profiles-service needs to facilitate services customisation.

The literature presents approaches to determining user profiles (Cullen & Hernon, 2004; Kumar, et al., 2007; OECD, 2003, p. 93-98; Pilling & Boeltzig, 2007; Schuppan, 2008; Webber, 2005). Accordingly, we propose (1) understanding the profiles of the targeted user groups, (2) delivering specific services that citizens demand most, and (3) adopting ease of use and multichannel strategies. The combination of these approaches will ensure that e-Government initiatives will attract citizens from different age groups.

Addressing service intrinsic issues

Service-intrinsic issues relate to various aspects of the service intended to be adopted by citizens. In order to be adopted, e-Government initiatives need to have characteristics that meet and exceed citizens' expectations. In this research, we established that characteristics related to the contents, delivery channel and other general aspects, such as responsiveness and privacy, are important in Tanzania. Therefore, government organizations need to address the dilemma of how they can improve the quality of their service-intrinsic issues to promote e-Government adoption.

Service-related issues are also multidimensional. They include content, system quality (channel) and the generic service issues. Content and system quality considerations

have been widely discussed in e-Government adoption literature (Gilbert, Balestrini & Littleboy, 2004; OECD, 2003, p. 75; Rotchanakitumnuai, 2008; W3C, 1999; Schuppan, 2008; Webber, 2005). In this study, we synthesize guideline 8 and guideline 9 for the information (content) quality and system (channel) quality respectively.

> **Guideline 8**: Ensure that the quality of the content provided, meet and/or exceed citizens' expectations.

> **Guideline 9**: Ensure that the quality of the channel/system provided to citizens, meet and/or exceeds their expectations.

We recommend several priority measures ensuring content and channel quality. We synthesize insights from various sources (Papadomichelaki et al., 2006; Signore, 2005; Wangpipatwong, Chutimaskul & Papasratorn, 2005) in order to address these issues. We will indicate four main measures that must be observed during the planning and development of the contents and the channels of service delivery (e.g. website). The measures are (1) applying industry-accepted best guidelines or standards (e.g. Web Content Accessibility Guidelines 1.0); (2) defining clear quality standards to facilitate monitoring and evaluation; (3) focusing on offering services that can save time and money; and (4) ensuring ease of use, usefulness, completeness, reliability and dependability of the contents and the channel. Providing functionalities that add value (e.g. a search ability) and are multilingual (e.g. Kiswahili and English) is also important. We also emphasize constant monitoring and evaluation as well as providing means for collecting and responding user feedback.

A focus on delivering high quality electronic contents or services to the citizens is imperative. Other service-related attributes that must be taken into consideration are responsiveness, usefulness and reliability. Accordingly, we propose guideline 10 for these aspects.

> **Guideline 10:** Ensure adequate responsiveness, usefulness, and systems integration in e-Government initiatives.

This guideline can be applied in different ways. From Affisco and Soliman, (2006), Cullen and Hernon, (2004), and Millard (2003) we suggest the following checkpoints: (1) emphasizing responsiveness to user enquiries by setting a standard response time

(2) ensuring service and system availability, and (3) fostering internal and external systems integration for service completeness.

Addressing access limitations

Adequacy of access infrastructure relates to the availability of ICT networks and equipment for using e-Government. Citizens will be unlikely to use e-Government initiatives that are delivered through channels and equipment that are inadequately available to them. Government organizations must overcome access challenges in favour of e-Government.

Infrastructure and ICT equipment inadequacy and unavailability are important challenges to the central government and to individual government organizations. An obvious advice that we wish to underline here is the improvement of the current condition of ICT and supporting infrastructure if e-Government initiatives are to be adopted (e.g. UN, 2008, InfoDev, 200). However, it may take long to implement a country-wide ICT and supporting infrastructure. In addition, it is not the responsibility of individual organizations to improve the national ICT infrastructure. Nevertheless, government organizations can still promote the adoption of their initiatives by utilizing access technologies that are currently locally available. Innovative use of ICTs with a high domestication potential (Anderson, 2002) is recommended. In this study, we emphasize the adoption of multichannel service delivery in guideline 11 (OECD, 2003, p.76). For instance, in Tanzania, the delivery of government services through mobile phones, TV, and radio may facilitate access for more citizens.

Guideline 11: Adopt the multi-channel strategy for accessing e-Government services.

The multichannel delivery strategy can promote inclusion of those who are less likely to use the internet and a computer as the main channels of services delivery (Pilling & Boeltzig, 2007). Accordingly, following Germanakos, Samaras & Christodoulou (2005), and OECD, 2003, the following checkpoints can help us implement this guideline: (1) adopting a citizen-focused ICT multichannel approach; (2) exploiting the potential of the available infrastructure; (3) using intermediaries in the form of partnerships; (4) and improving access ICT infrastructure.

Addressing organizational context

The organizational context challenge is posed by two key issues: organizational autonomy and the nature of a government organization and its business. Organizational autonomy highlights the importance of understanding that government organizations have their statutory limitations. This affects the adoption of e-Government initiatives. Therefore, organizations must overcome their statutory limitations to promote e-Government adoption. This can be achieved if the organizations will strive to establish cooperation between various partners in favour of their e-Government initiatives (Aichholzer & Schmutzer, 2000; OECD, 2003, p. 48; West, 2004). Accordingly, we recommend that government organizations should foster interorganizational and intraorganizational cooperation and collaboration, i.e. guideline 12.

Guideline 12: Establish inter organizational and intra organizational collaboration.

Intraorganizational collaboration is intended for promoting the participation of internal departments, while interorganizational collaboration seeks the participation of external partners. In this way, issues that require involvement of multiple internal and external stakeholders, such as service completeness, can be approached better. This can be achieved by establishing a mechanism that allows such kinds of collaboration.

As different government organizations will attract citizens differently (The Economist, 2008), guideline 13 is proposed. In this guideline, we emphasize that government organizations should understand their own nature and business (Esteves & Joseph, 2008). For instance, an e-Government initiative by a military organization may attract fewer citizens compared to the initiative of a hospital or a passport provider. Organizations must consider electronic initiatives keeping in mind their own nature (organization and business). We particularly suggest that government organizations should determine a clear picture for their public image. This will facilitate choices and the plans for relevant services and the respective delivery channels.

Guideline 13: Determine the perceived public image of the organization.

Table 5-3 Summary of the Guidelines and Theoretical Sources

Issue	Guideline	Guidelines source	Checkpoint Sources
1	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	Holmes, 2002; Information Management Office, 2004;Ndou, 2004; Reddick, 2005; Timmers, 2000	Bhatagnar, 2004; Gil-Garcia & Pardo, 2005; Kamal, 2006; Lallana, 2008; Owei, Maumbe, & Rhyn, 2006; OECD, 2005, pp.38-9; Wang, Doong, & Lin, 2007; West, 2004
	Ensure that policies, practices, and processes support and formalize electronic communication	Bhatagnar, 2004, OECD, 2003, UN, 2008	Bhatagnar, 2004, p. 62; Gil-Garcia & Pardo, 2005; Kamal, 2006; Ndou, 2004; p.49
2	Provide services through multi-channels	Millard, n.d, OECD, 2005,	OECD, 2005 and field experience in Tanzania
	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government and externally	Pilling & Boeltzig, 2007	Holmes, 2007
	Ensure simplicity of contents and technologies delivered	Information Management Office, 2004	Bhatnagar, 2004; Cullen & Hernon, 2004; Wangpipatwong, Chutimaskul & Papasratorn, 2008
	Promote the ability to receive public services without having to interact with members of the service provider's staff	Researcher's formulation	Cullen & Hernon, 2004; Thomas &Streib 2003
	Determine user profiles-service needs	Morris and Venkatesh, 2000; Researcher's formulation	Cullen & Hernon, 2004; Kumar, et al., 2007; OECD, 2003, p.93-98; Pilling & Boeltzig, 2007; Schuppan, 2008; Webber, 2005
3	Ensure that the quality of the content provided to citizens, meet and/or exceeds their expectation	Gilbert, Balestrini, Littleboy, 2004; Hung, Chang, & Yu, 2006; OECD, 2003, p.75; Rotchanakitumnuai, 2008, W3C, 1999; Schuppan, 2008; Webber, 2005	Papadomichelaki et al., 2006; Wangpipatwong, Chutimaskul & Papasratorn, 2005
	Ensure that the quality of the channel/system provided to citizens, meet and/or exceeds their expectation	Papadomichelaki et al., 2006; Wangpipatwong, Chutimaskul & Papasratorn, 2005	Same as in 8
	Ensure adequate responsiveness, usefulness, and systems integration in e-Government initiatives	Signore, 2005; Wangpipatwong, Chutimaskul & Papasratorn, 2008	Affisco & Soliman, 2006, Cullen & Hernon, 2004, and Millard, 2003
4	Adopt the multi-channel strategy for accessing e-Government services	UN, 2008, InfoDev, 2002; OECD, 2003	Germanakos, Samaras & Christodoulou; 2005; Pilling & Boeltzig, 2007
5	Determined the perceived organizational public image	Aichholzer & Schmutzer, 2000; OECD, 2003, p.48; West, 2004	Researchers received wisdom
	Determine the perceived public image of the organizational	Economist, (2008); Esteves & Joseph, (2008)	Researchers received wisdom

Table 5-4: Guidelines for Enhancing E-Government Adoption in Tanzania

Issue	Sub-issue	No.	Guideline	Checkpoints	
Perceived Organizational preparedness	Organizational-wide buy in	1.	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	1.1.	Establish internal champion
				1.2.	Conduct awareness and branding campaigns
				1.3.	Demonstrate of visible benefits/success
				1.4.	Develop a coaching programme
				1.5.	Ensure Internal stakeholders involvement
				1.6.	Provide incentives to encourage internal e-utilization
	Adequacy of processing machinery	2.	Ensure that policies, practices, and processes support and formalize electronic communication	2.1.	Review legal, regulatory, and process frameworks in favour of ICT
				2.2.	Promote internal ICT skills
				2.3.	Promote interdepartmental collaboration
Citizens preparedness	Affording to pay-for	3.	Provide e-Government services through multi-channels	3.1.	Exploit the potentials of locally widely available channels
				3.2.	Lower the access transaction cost
	Awareness of existing services	4.	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally	4.1.	Deliver highly demanded services
				4.2.	Conduct awareness and branding campaigns
				4.3.	Demonstrate visible benefits/success
				4.4.	Involve stakeholders
				4.5.	Engage social intermediaries
	ICT skills	5.	Ensure simplicity of the contents and technologies used in delivering e-Government services	5.1.	Observe ease of use
				5.2.	Identify and deliver services through locally widely available ICT channels
				5.3.	Ensure help is available
	Preference for face-to-face	6.	Promote the ability to receive public services without having to interact with members of the service provider's staff	6.1.	Provide incentives to encourage electronic communication
				6.2.	Prioritize electronic communication
				6.3.	Increase options for electronically delivered services
	Age	7.	Determine user profiles-service needs to facilitate services customisation	7.1.	Identify specific potential users
				7.2.	Identify and deliver the highly demanded services
				7.3.	Deliver through multi-channels
				7.4.	Ensure ease of use
Service issues	Information quality	8.	Ensure that the quality of the content provided to citizens, meet and/or exceeds	8.1.	Use international guidelines for content development (e.g. W3C guidelines)

Table 5-4: Guidelines for Enhancing E-Government Adoption in Tanzania

Issue	Sub-issue	No.	Guideline	Checkpoints
			their expectations	8.2. Define and adopt clear content and systems quality measures
				8.3. Emphasize services that can save time and money
				8.4. Ensure completeness, ease of use, usefulness, and up-to-datedness
				8.5. Adopt a multi-lingual approach (Swahili and English)
				8.6. Provide feedback mechanism
				8.7. Conduct frequent content evaluation
	Website quality	9.	Ensure that the quality of the channel/system provided to citizens meets and/or exceeds their expectations	9.1. Use international guidelines for system development (e.g. W3C guidelines)
				9.2. Define clear content and systems quality measures
				9.3. Provide system functionalities that add value (e.g. search-ability and a multilingual approach)
				9.4. Ensure User friendliness, easy-of-use
				9.5. Ensure reliability and dependability
	Generic service quality	10.	Ensure adequate responsiveness, usefulness, and systems integration in e-Government initiatives	10.1. Emphasize responsiveness to user enquiries
				10.2. Ensure service and system availability
				10.3. Foster internal and external systems integration for service completeness
Access issues	Adequacy of ICT networks and availability of access equipment	11.	Adopt the multi-channel strategy for accessing e-Government services	11.1. Improve access ICT infrastructure
				11.2. Adopt citizen-focused ICT multi-channelling approach
				11.3. Exploit the potentials of the available infrastructure
				11.4. Use intermediaries
Organizational Context	Limit of responsibilities	12.	Establish inter and intra organizational collaboration	12.1. Establish intra organizational and inter organization collaboration mechanism
	Nature of the organization and business	13.	Determine the perceived organizational public image	13.1. Foster for a supportive perceived organizational public image

5.4 Summary

In this chapter we started with presenting the requirements for a solution for enhancing e-Government adoption in Tanzania. We explained that the objective of the solution, the context of application, and the users of the solution are important considerations for developing such a solution. We further presented 13 guidelines for improving the adoption of e-Government initiatives in the country. As suggested by Hevner (2007), a design science artefact needs to be evaluated for refinement and adjustment. This is also relevant to the guidelines we have proposed. At this stage, the guidelines are yet to be evaluated. We therefore must to evaluate them to establish the extent to which they fulfil the requirements set out in section 5.2. This will provide us with information concerning the value of the guidelines and the adjustments required to improve the quality of the guidelines for better performance. In chapter 6, we present the process and results of guidelines evaluation.

.

Chapter 6
Evaluating the guidelines for enhancing e-Government adoption

In chapter 5, we presented the guidelines for enhancing e-Government adoption by citizens in Tanzania. We also proposed ways to use the guidelines. In addition, we explained the status of the proposed guidelines. We observed that the guidelines must be evaluated to establish their value in solving the intended business problem. In this chapter, we will present the process and activities involved in evaluating the guidelines. The evaluation involved eliciting opinions of experts participating in the development of three different e-Government initiatives. More specifically, the evaluation involved three aspects, namely relevance, usefulness and usability. The resulting information allowed us to determine the adequacy of the guidelines for facilitating decisions on enhancing e-Government adoption.

6.1 Evaluation background

In chapter 5, we introduced guidelines for enhancing the adoption of e-Government initiatives. The guidelines are intended to provide implementers of e-Government with information relevant to deploying initiatives that are likely to be adopted by citizens in Tanzania. We argued that a high degree of adoption of e-Government initiatives in Tanzania can be achieved if the issues presented in chapter 4 will be addressed. Therefore, the guidelines are specifically intended to address the issues in favour of a high citizen adoption rate of e-Government initiatives in Tanzania. However, we also highlighted that further evaluation is required to establish the quality of the guidelines for enhancing e-Government adoption. In this chapter, we present the process and activities involved in the evaluation process.

Evaluation is an important step in introducing a solution (artefact) to an observed problem. According to Hevner et al. (2004), the purpose of the evaluation stage is to provide feedback on the quality of an Information Technology (IT) artefact. This is important to be able to assess the completeness and effectiveness of the artefact in its respective business environment. This will help refine and/or modify the new innovation being developed. In this study, the artefact refers to the guidelines we are proposing.

We wanted to establish their quality with regard to facilitating decisions that may lead to the enhanced adoption of e-Government initiatives by citizens in Tanzania.

Keen and Sol (2008) indicate that usefulness, usability and usage (3 Us) are key attributes that determine decision enhancement. Usefulness relates to the extent to which an artefact is suitable for achieving a certain specified goal (Davis, 1986; Keen & Sol, 2008). Usability is the extent to which the artefact is perceived as usable by specified users (Wang, 2007). Usage relates to the actual application of the artefact in business processes (Keen & Sol, 2008).

We relate the requirements we defined previously (5.2) to the 3 Us mentioned above. Usefulness is related to the objective of the guidelines (5.2.1). In other words, the guidelines should be useful for enhancing the adoption of e-Government initiatives. We observed that, on the basis of the structure of the guidelines, the usefulness could be evaluated on two levels. The first level concerns the evaluation of the set of guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania. The second level concerns the usefulness of each guideline in facilitating a certain adoption issue. Following the work of Tsakonas and Papatheodoros (2006), we labelled this aspect relevance. We define relevance as the extent to which each guideline contributes to addressing a specific adoption issue identified in this study.

Usability of an innovation depends on the context in which a product is used or applied (Bevan & MacLeod, 1994). In other words, the characteristics of an innovation should fit the business environment, the task and the user expectations. Much in the same way, the usability of the guidelines is reflected in the context of application (5.2.2) and in the users of the guidelines (5.2.3). The guidelines should be usable in the Tanzanian government sector, and by the various users involved in deciding upon the e-Government initiatives in Tanzania. Accordingly, users should perceive that it is possible to apply the guidelines with ease. Usage is the embedding of the guidelines in the decision-making processes when developing e-Government initiatives.

We evaluated the usefulness and usability of the guidelines. We did not evaluate the usage of the guidelines, as we were evaluating an innovation in the form of guidelines (i.e. decision-making information) in the government environment. Therefore, it was not

possible to obtain usage details on the decisions made from the guidelines during the course of this study. To obtain such details would require us to seek for formal approval and supervision by the management of the government organizations involved for a certain period of time. This would allow us to record details that would inform us on the usage of the guidelines in decision-making. It was difficult to secure such approval and support. Therefore, we focused on evaluating the relevance, usefulness and usability of the proposed guidelines. These aspects provided us with valuable feedback concerning the suitability of the guidelines for the intended purpose in the Tanzanian context and for Tanzanian users. In the following sections, we will present the approach and the results of the evaluation process.

6.2 Approaching guideline evaluation

Hevner et al. (2004) posit that the selected evaluation method must match the nature of the newly designed artefact. This helps demonstrate rigorously the quality and the efficacy of the artefact being introduced. Accordingly, following Hevner (ibid.), we chose the field case approach to facilitate the evaluation of the guidelines. We made this choice because the guidelines are intended to facilitate the decision-making for deploying citizen-adoptable e-Government initiatives. In Tanzania, decisions concerning e-Government initiatives are made at the level of individual government institutions. Accordingly, e-Government initiatives and their respective resources, including people, are found at the organization level. Therefore, it was important to evaluate the guidelines in an environment where the decisions concerning e-Government initiatives are actually made. This facilitated reaching the environment where e-Government initiatives as well as experts are available, thus obtaining the most informative feedback on the guidelines.

6.2.1 Case selection and description

We needed to select appropriate case organizations to facilitate the process of evaluating the guidelines. We observed that government organizations with ongoing or underway e-Government initiatives would provide the most appropriate evaluation environment for the guidelines. In addition, we were interested in initiatives that focused on providing services to citizens. This would provide us with a typical environment where e-Government-related decisions are carried out. Accordingly, three organizations in Dar es Salaam, Tanzania, were used for this evaluation. They are (1)

the Tanzania Commission for Science and Technology (COSTECH), (2) the Registration, Insolvency and Trusteeship Agency (RITA), and (3) the Dar Es Salaam Water and Sewage Corporation (DAWASCO). We briefly describe each case and the unit used for analysis from each case.

Case 1: COSTECH

COSTECH is a government organization established by the Act of Parliament No. 7 in 1986 (URT, 1986). It is responsible for coordinating and promoting research and technology development activities in Tanzania. The organization is also the principal advisory organ of the Government in all matters concerning scientific research and technology development in the country. COSTECH has been coordinating and undertaking science and technology research in various disciplines, including Information and Communication Technology (ICT) projects. Other disciplines include agriculture, medicine and engineering (COSTECH, 2005).

COSTECH categorizes its ICT research activities into two main streams. The first stream concerns the use of ICT for good governance. This category aims to research, introduce and advocate the use of ICT to promote good governance, particularly in the government. Dovetailing with this, COSTECH participates in the implementation of ICT at the Kinondoni and Zanzibar Municipal Councils. The projects are aimed at improving decision-making and promoting an information-sharing culture. The second stream focuses on providing ICT access to the rural areas of Tanzania. The main objective is to improve social inclusion and enable rural Tanzanians to participate in the knowledge-based economy.

COSTECH has initiated and implemented the ICT Access for Rural Development (ICT4RD) initiative (Mascarenhas & Maghimbi, 2005). The initiative is intended to facilitate access for rural citizens to digital technologies and contents. Through community access points, ICT4RD allows citizens to use computers and computer-related contents. In addition, services such as radio, secretarial services, and trainings are also provided. During this evaluation, the initiative had been implemented in Bunda, Sengerema, Ngara, Kasulu, and in Lugoba and Dakawa villages.

The ICT4RD initiative provided us with an adequate evaluation environment for our guidelines. As outlined above, ICT4RD is a typical citizen-focused e-Government initiative with a specialized management team of experts participating in decision-making. Although the initiative has remote coordination offices, COSTECH hosts the national coordination team in Dar es Salaam. The team is responsible for planning and facilitating all activities regarding the projects. The team provided us with the feedback we needed for fine-tuning the guidelines.

Case 2: RITA

Historically, RITA dates back to 1917 when the German colonial power enacted the registration law for birth and death. The organization was relaunched in 2006 to consolidate and execute various responsibilities of the then Administrator General's Department in the Ministry of Justice and Constitutional Affairs (RITA, 2009). It is responsible for recording vital information (birth, death, marriage, divorces, etc.) and managing insolvency and trusteeship in Tanzania.

Like many of the Government organizations, RITA inherited the traditional government way of processing and delivering services. The manual system, commonly known in Tanzania as dokezo, is prevalent, and rooted in every business activity. However, currently, the organization has recognized the potential of ICT and has embarked upon various initiatives aimed at delivering the vision and mission in better quality. For instance, the organization has developed a web portal that, among other information, provides downloadable forms for the application of various services RITA offers.

During this evaluation, RITA was in the process of implementing a Vital Registration System (VRS) country-wide. The system is intended to facilitate the timely registration of vital information such as birth, death, marriage, divorce, adoption, and the issuing of the respective certificates. The Vital Registration System was being piloted in several districts in the country, including Dodoma, Kinondoni, Ilala, Temeke and Kibaha.

The Vital Registration System initiative from RITA was used as an evaluation unit for the proposed guidelines. At the time of the evaluation, key discussions and decisions concerning the pilot project were being made, and the supporting strategy was being developed. A number of managers and experts were involved in the project. This

provided us with a suitable opportunity to evaluate our guidelines in a practical decision-making context.

Case 3: DAWASCO

DAWASCO is parastatal organization established in 2005 (WDM, 2008). The organization deals with water supply and sewerage services management in Dar es Salaam and parts of the coast region. DAWASCO manages water resources, maintains water quality, deals with sewerage, and bills and collects revenue from its customers. DAWASCO is also responsible for educating its customers about water resources management in order to ensure a sustainable water supply (DAWASCO, 2007).

Since its establishment, the organization has been attempting to improve the quality of its services. Important areas of improvement include the technical infrastructure (water pipes), human capital and customer care (DAWASCO, 2007). A specific emphasis has been put on customer care. This is due to the growing complaints about inconsistency, inaccuracy and the late issuing of water bills. With customers, this problem causes discontent about services, while repressing the corporation's revenue growth. To tackle this problem, the organization has been using ICT as a key facilitator. Some of the initiatives include the establishment of the VPN pay stations across Dar es Salaam, the online water bill tracking system, and the issuing of water bills through SMS (the SMS bill).

The SMS bill initiative was chosen for this evaluation. The initiative facilitates DAWASCO to send personalized water bills to each of its customers through their mobile phones. In addition, it allows customers to enquire about their water bills payment status. The initiative has been introduced to reduce customer complaints, while enhancing interaction with DAWASCO. During this study, the initiative was in its initial stage. Managers and experts were involved in designing and piloting the projects. This environment provided us with a fitting unit for the evaluation of our guidelines.

6.2.2 Evaluation protocol

Information needs

Considering the attributes we highlighted in 5.2 and 6.1, we needed on feedback concerning the relevance, usefulness and usability of the guidelines. We summarize our information needs in Table 6-1. To evaluate the relevance of our guidelines, we needed to establish the extent to which each guideline was fit to addressing a respective adoption issue. This information could be obtained by measuring the attitude of the respondents on this issue. Hence, we measured the attitude by scoring (see 6.2.3) against each guideline. According to Davis (1986), usefulness is the degree to which a person believes that using an innovation would enhance his/her job performance to achieve their goals. Likewise, we needed to asses the extent to which the guidelines are perceived to improve decisions related to deployment of adoptable e-Government initiatives. More specifically, from Davis (ibid.), we focused on the perception that the guidelines can improve performance, effectiveness, and efficiency in decision-making (Table 6-4). However, we remained open and flexible to notice any other quality attributes that would emerge from interviews. We summarize the information regarding the usability of the guidelines in Table 6-6.

Table 6-1: Information Needs for Guidelines Evaluation

Requirement	Information needs	Related Question	
Relevance	The fit of each guideline to address specific adoption issue	Scoring of 1.1 - 13.1	(Table 6-3)
Usefulness	Efficiency	2,3,5	(Table 6-4)
	Performance	1,7	
	Effectiveness	4,6,8	
	Other	9-11	(Table 6-6)
Usability	Learnability	13, 17	(Table 6-5)
	Efficiency of use	12, 14, 19	
	Memorability	15, 20	
	Error freeness	16, 18	
	Applicability in the Tanzanian public sector	21-25	(Table 6-7)
	Usability of the guidelines by e-Government actors	26-28	(Table 6-8)

According to Nielsen (1993) usability is related to four main issues; learnability, efficiency of use, memorability and error freeness. In this study we evaluated the usability of the guidelines on the basis of these aspects (Table 6-7). In addition, we wanted to evaluate the applicability of the guidelines in the Tanzanian public sector, and by the various actors (5.2.3). To this aim, through interviews, we elicited

information concerning the fit into the government sector, and the possibility of being used by different actors in Tanzania (Tables 6-7, 6-8).

Selection of experts for evaluation

With regard to the information needs stated above, we observed that we would be informed better by experts involved in implementing specific e-Government initiatives in Tanzania. We needed to obtain experts' observations concerning the quality of the guidelines. We wanted them to give their opinion after they have been introduced to the guidelines. Therefore, we selected practitioners involved in decision-making for e-Government initiatives in their respective organizations. To achieve this, precursory meetings were organised with senior officers from each case organization. The meetings were used to identify and select practitioners who could participate in the evaluation activity. The meetings were also used for agreeing upon the procedures to be followed during the evaluation process.

Twenty (20) experts were available to participate in the evaluation, and they responded to a questionnaire from the case organizations. In addition, we interviewed two experts from each of the case organizations. Further, we interviewed three other experts from the central Bank of Tanzania (BoT), Ministry of Communications Science and Technology (MCST), and Ministry of Regional and Local Government Administration Ministry (PMO-RALG). Table 6-2 below summarises the composition of practitioners from each case.

Table 6-2: Composition of Correspondents during the Evaluation Process

Case organization	Composition of experts	Questionnaire	Interviews
COSTECH	Director of Information (1), scientific officers (6), project manager (1)	8	2
RITA	CEO (1), Director of ICT (1), computer manager (1), systems analysts (3), consultant (1)	7	2
DAWASCO	Computer manager (1), commercial manager (1), DBA (1), systems analyst (1), ICT consultant (1)	5	2
Other	Assistant Directors – MCST (1) , PMO-RALG (1), BoT (1)	-	3
Total		**20**	**9**

Data collection procedures

We used a questionnaire and an interview guide to collect data. The questionnaire is included as Appendix 12.B, while the interview guide items are presented in chapter 6. The questionnaire was used to collect experts' judgements on the usefulness and

usability of the guidelines. The questionnaire was composed of closed-ended and open-ended items. The closed-ended items were on a 5-point Likert scale style (Brown & Saunders, 2008). This provided the respondents with a wide rating range of 5 (strongly agree) to 1 (strongly disagree), and allowed statistical analysis (Clayton, 1997). We also provided the respondents with one open-ended question to elicit any additional relevant additional information. This section allowed respondents to express their observations that could not be provided through the Likert scale questions.

The evaluation questionnaire comprised of three main sections (Appendix 12.B). The first section was intended to evaluate the relevance of the guidelines. Respondents were requested to provide their judgement concerning the relevance of each guideline and checkpoint towards its corresponding adoption issue identified in the previous stages. The items included in this section were the actual proposed guidelines. The second section was intended to measure the usefulness and usability of the guidelines. This section contained usefulness and usability items validated and obtained from previous work (Davis, 1989; Mulira, 2007; Muniafu, 2007; Nielsen, 1994; Korteman, 2005). The third section contained the open-ended section. It was intended to capture any information that respondents wanted to communicate to complement the closed-ended sections. The three sections allowed us to evaluate the quality of individual guidelines as well as the whole set of guidelines.

In each case, we first organized and conducted a workshop for the identified experts. At the beginning of the workshops, each participant was given a document outlining the proposed guidelines and the evaluation questionnaire. This was followed by an in-depth presentation on the guidelines, and the evaluation process. Afterwards, a participatory discussion was held whereby participants were allowed to ask questions and seek for clarification of unclear issues. The experts were allowed to practise the guidelines for a minimum of three working days. In some cases this period extended to 10 working days. The respondents were then requested to provide feedback by means of the provided questionnaire. For confidentiality reasons the questionnaires were not labelled and experts were not requested to provide their identity. This improved respondents' confidence and allowed them to provide their evaluation more objectively.

The evaluation through Likert scale is useful to quantitatively indicate respondents' attitude on the quality of the guidelines. We observed that due to the nature of the application context and users (5.2.2; 5.2.3); this approach may have not informed us sufficiently. Accordingly, we sought to obtain further information and clarification through interviews. In this way we were able to collect rich information concerning the quality of the guidelines which otherwise would have not been obtained through closed ended questionnaire.

6.2.3 **Analysis**

As described above, a Likert scale questionnaire was used to collect data for this evaluation. Brown and Saunders (2008) suggest that Likert scales fall into the ordinal data category. Knapp (1990) says that nonparametric tests are appropriate for analysing ordinal data. According to Jamieson (2004) for ordinal data one should employ the median or mode as the measure of central tendency when analysing ordinal data. We therefore adopted this strategy to extract meaning from the collected data. We considered our data to be ordinal and applied nonparametric tests to extract the inferred meanings. Specifically, we present the *mean (x), standard deviation (σ),* and the *mode (m).* Additionally, as recommended by Jamieson (2004), we use the mode to indicate the *attitude* of the subjects concerning quality of the proposed guidelines.

We also deduced meanings from textual and interview responses provided by the respondents. Data from the open-ended questions and interviews were analysed qualitatively. We first transcribed the entire interviews and confirmed them with our respondents. We then analysed them to deduce meanings from the resulting textual excerpts. In section 6.3.4, we present selected quotes and their source and interpret meanings that respondents wanted to communicate. The sources of each quote are denoted as R.X where R stands for respondent identifier and X for the number we assigned to each respondent. For instance, a quote by a fourth respondent will be denoted as R.4.

6.3 Evaluation results

The evaluation involved assessing respondents' attitudes regarding the usefulness and usability of the guidelines. We collected information by means of a questionnaire and interview guide. In this section we present the results. For each criterion we present

insights from the questionnaire followed by those from the interviews. We also present other issues we learned from the context. Finally we provide an implication of the results of the evaluation.

6.3.1 Evaluation of the usefulness of the guidelines

Usefulness insights from the questionnaire

As we discussed in section 6.1, we divided the evaluation of the usefulness of the guidelines into stages. The first stage comprised the relevance of the guidelines. Relevance evaluation was intended to capture the respondents' attitude towards the appropriateness of each guideline for addressing a respective adoption issue to be addressed. The overall attitude concerning the relevance of each guideline (Table 6-2) was between m = 4 and 5. This indicates a positive attitude on the relevance of the guidelines on facilitating their decisions concerning e-Government initiatives. This indicates that the guidelines are relevant to address respective adoption issues identified in this study. We therefore conclude that, if utilized, the guidelines can facilitate decisions that can enhance citizen adoption of e-Government initiatives in Tanzania.

A specific observation was made concerning the relationship between citizen adoption and organizational autonomy (guideline 13). Unlike the rest of the guidelines, this guideline received a score of m = 4 in all the three cases. We decided to seek for further clarification from our contact respondents in each case. Respondents clarified that it was not easy for the respondents to relate the two issues. This is because the concept of terminology 'organizational autonomy' was still new to them. As we mentioned in Chapter 4, the contribution of organizational autonomy to citizen adoption of e-Government initiatives was indirect. We also learned that, the importance of the public image in the public sector is still new. However, respondents agreed that the organizational image is a key issue in the quality service in the public sector. We observed that the guideline elaborates and is relevant for addressing the respective adoption issue.

Table 6-3: Relevance Evaluation Results

No.	Guideline	Checkpoints	COSTECH(n=8)			RITA(n=7)			DAWASCO(n=5)		
			$\bar{x}$	σ	m	$\bar{x}$	σ	m	$\bar{x}$	σ	m
1.	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	1.1. Establish an internal champion	4.50	0.71	5	4.43	0.98	5	4.60	0.89	5
		1.2. Conduct awareness and branding campaignins	4.63	0.48	5	4.43	0.79	5	4.20	1.30	5
		1.3. Demonstrate of visible benefits/success	4.88	0.33	5	4.86	0.38	5	4.20	1.30	5
		1.4. Develop a coaching programme	4.25	0.66	4	4.29	1.11	5	3.80	1.30	5
		1.5. Ensure internal stakeholders involvement	4.75	0.43	5	4.71	0.49	5	4.20	1.30	5
		1.6. Provide incentives to encourage internal e-utilization	4.38	0.70	5	4.43	0.79	5	3.60	1.34	5
2.	Ensure that policies, practices, and processes support and formalize electronic communication	2.1. Review legal, regulatory and process frameworks in favour of ICT	4.50	0.71	5	4.57	0.53	5	4.40	0.89	5
		2.2. Promote internal ICT skills	4.63	0.48	5	5.00	0.00	5	4.40	0.89	5
		2.3. Promote interdepartmental collaboration	4.88	0.33	5	4.86	0.38	5	4.60	0.55	5
3.	Provide e-Government services through multi-channels	3.1. Exploit the potentials of locally widely available channels	4.63	0.48	5	4.71	0.49	5	3.80	0.45	4
		3.2. Lower the access transaction cost	4.50	0.71	5	4.14	0.38	4	4.40	0.55	4
4.	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally	4.1. Deliver highly demanded services	4.63	0.70	5	4.57	0.53	5	4.40	0.55	4
		4.2. Conduct awareness and branding campaigns	4.63	0.70	5	4.57	0.53	5	4.40	0.89	5
		4.3. Demonstrate visible benefits/success	4.63	0.48	5	4.57	0.53	5	4.60	0.55	5
		4.4. Involve stakeholders	4.13	0.93	4	4.86	0.38	5	4.60	0.89	5
		4.5. Engage social intermediaries	4.38	0.70	5	3.86	0.69	4	4.00	0.71	4
5.	Ensure simplicity of thecontents and technologies used in delivering e-Government services	5.1. Observe ease of use	4.50	0.71	5	4.57	0.53	5	4.40	0.89	5
		5.2. Identify and deliver services through locally widely available ICT channels	4.50	0.71	5	4.43	0.79	5	4.60	0.55	5
		5.3. Ensure help is available	4.75	0.43	5	4.71	0.49	5	4.80	0.45	5
6.	Promote the ability to receive public services without having to interact with members of the	6.1. Provide incentives to encourage electronic communication	4.63	0.48	5	4.71	0.49	5	4.20	0.84	5
		6.2. Prioritize electronic communication	4.75	0.43	5	4.71	0.49	5	4.60	0.89	5
		6.3. Increase options for electronically delivered services	4.88	0.33	5	4.86	0.38	5	4.80	0.45	5

Table 6-3: Relevance Evaluation Results

No.	Guideline	Checkpoints	COSTECH(n=8)			RITA(n=7)			DAWASCO(n=5)		
			$\bar{x}$	σ	m	$\bar{x}$	σ	m	$\bar{x}$	σ	m
	service provider's staff f										
7.	Determine user profiles-service needs to facilitate services customisation	7.1. Identify specific potential users	4.38	0.70	5	4.29	0.95	5	4.40	0.89	5
		7.2. Identify and deliver the highly demanded services	4.63	0.70	5	4.71	0.49	5	4.40	0.55	4
		7.3. Deliver though multi-channels	4.50	0.71	5	4.71	0.49	5	4.20	0.84	5
		7.4. Ensure ease of use	4.63	0.48	5	4.71	0.49	5	4.60	0.55	5
8.	Ensure content quality meets citizen expectation	8.1. Use international guidelines for content development (e.g. W3C guidelines)	4.13	0.78	5	4.29	0.76	4	4.40	0.89	5
		8.2. Define and adopt clear content and systems quality measures	4.25	0.97	5	4.57	0.53	5	4.80	0.45	5
		8.3. Emphasize on services that can save time and money	4.63	0.70	5	4.29	0.49	4	4.80	0.45	5
		8.4. Ensure completeness, easy-of-use, usefulness, and up-to-datedness	4.63	0.70	5	4.57	0.53	5	4.60	0.55	5
		8.5. Adopt multi-lingual approach (Swahili and English)	4.63	0.70	5	4.29	0.49	4	3.80	1.64	5
		8.6 Provide feedback mechanism s	4.50	0.71	5	4.57	0.53	5	4.80	0.45	5
		8.7 Conduct frequent content evaluations	4.75	0.43	5	4.29	0.76	4	4.80	0.45	5
9.	Ensure website/system quality meets citizen expectations	9.1 Use international guidelines for system development (e.g. W3C guidelines)	3.88	0.93	4	4.14	0.69	4	4.20	1.30	5
		9.2. Define clear content and systems quality measures	4.13	0.78	4	4.43	0.79	5	4.40	1.34	5
		9.3 Provide system functionalities that add value (e.g. search-ability and multilingual approach)	4.75	0.43	5	4.43	0.53	4	3.80	1.64	5
		9.4 Ensure User friendliness, easy-of-use	4.88	0.33	5	4.57	0.53	5	4.40	0.89	5
		9.5. Ensure reliability and dependability	4.63	0.48	5	4.71	0.49	5	4.60	0.89	5
10.	Refine responsiveness, usefulness, and systems integration	10.1. Emphasize responsiveness to user enquiries	4.75	0.43	5	4.71	0.49	5	4.60	0.55	5
		10.2. Ensure service and system availability	4.88	0.33	5	4.71	0.49	5	5.00	0.00	5
		10.3. Foster internal and external systems integration for service completeness	4.75	0.43	5	4.57	0.53	5	5.00	0.00	5
11.	Adopt the multi-channel	11.1. Improve access ICT infrastructure	4.88	0.33	5	4.57	0.53	5	4.40	0.89	5

Table 6-3: Relevance Evaluation Results

No.	Guideline	Checkpoints	COSTECH(n=8)			RITA(n=7)			DAWASCO(n=5)		
			$\bar{x}$	σ	m	$\bar{x}$	σ	m	$\bar{x}$	σ	m
	strategy for accessing e-Government services	11.2. Adopt citizen-focused ICT multi-channelling approach	4.88	0.33	5	4.14	0.69	4	4.40	0.55	4
		11.3. Exploit the potentials of the available infrastructure	4.88	0.33	5	4.57	0.53	5	4.60	0.55	5
		11.4. Use intermediaries	4.13	0.60	4	3.71	0.49	4	3.60	0.55	4
12.	Establish inter and intra organizational collaboration	12.1. Establish intra and inter organization collaboration mechanism	4.75	0.43	5	4.57	0.53	5	4.20	0.45	4
13.	Determined the perceived organizational public image	13.1. Foster for a supportive perceived organizational public image	4.38	0.48	4	4.14	0.69	4	4.20	0.45	4

The second usefulness evaluation involved assessment of the quality of the suite of the guidelines. In this evaluation, respondents were asked to indicate their perception on applying the guidelines in their respective e-Government initiatives. Positive and negative statements were used to evaluate usefulness. The average mode for positive results from COSTECH respondents was *m = 5* and that of RITA and DAWASCO as *m* = 4. Scores concerning the perceived efficiency (Q. 2, 3 &5) of the guidelines was *m* = 4. Performance (Q. 1, 7) was assessed at *m* = 5 for positive question and *m* = 1 for the negative question. Effectiveness (4, 6, & 8) was evaluated at *m* = 4 and *m* = 1 for the positive and negative questions respectively.

The overall results on the positive statements were between *m* = 4 and 5. Evaluation by negative statements in all cases indicated the attitude between *m* = 1 and 2. We interpreted that both results support to the positive statements and the negation of the negative statement indicate usefulness of the guidelines. This shows the extent to which experts observed that guidelines were useful to facilitate their decisions towards more citizen adoptable e-Government initiatives in Tanzania.

Table 6-4: Evaluation of the Usefulness of the Guidelines

Usefulness	COSTECH(n=8)			RITA(n=7)			DAWASCO(n=5)		
	$\bar{x}$	σ	m	$\bar{x}$	σ	m	$\bar{x}$	σ	m
1. Using the guidelines improves the quality of my work	4.50	0.71	5	4.71	0.49	5	4.50	0.58	5
2. The guidelines enhance my understanding of the important e-Government adoption issue	4.63	0.48	5	4.43	0.79	5	4.00	0.82	4
3. Using the guidelines would help me to accomplish my work faster than I would otherwise	4.13	0.60	4	4.43	0.53	4	4.25	0.50	4
4. The guidelines reflect the actual issues that I have to address in my work	4.38	0.70	5	4.14	0.38	4	4.25	0.50	4
5. Using the guidelines would facilitate the delivery of more citizen-focused e-Government initiatives	4.38	0.70	5	4.14	0.38	4	4.50	0.58	4
6. I do not see any added value in using the guidelines	1.25	0.43	1	1.71	1.25	1	1.00	0.00	1
7. I would prefer to carry out my tasks without the guidelines	1.63	0.48	2	1.71	1.25	1	1.00	0.00	1
8. The guidelines do not really address the issues I expected	1.13	0.33	1	2.00	1.00	2	1.50	1.00	1

Usefulness insights from interviews

On the basis of the interviews we wanted to establish experts' opinions on the strengths and weaknesses on the usability of the guidelines (Table 6-5). We elicited this information through three main questions summarized in Table 6-5. Accordingly, we noted several issues that informed us on how respondents perceived the *current strengths* of the guidelines, and the *required improvements* to enhance the quality of the guidelines. The current strengths of the guidelines can be grouped into two main categories; 1) provision of *guidance* that *simplifies* planning and evaluation in a *systematic way*, 2) wide *coverage* of adoption issues (scope). The required improvements are 1) need for the elaboration of access channels, 2) inclusion of capacity building in the checkpoints list for organizational preparedness, and 3) the linkage of the guidelines with e-Government standardization. We provide a summary of the key issues and the related indicative quotes from the interviews in Table 6-6.

Table 6-5: Evaluating Usefulness of the Guidelines

Question	Focus of evaluation
9. In which ways do you find the guidelines useful to facilitate your e-Government related decisions?	Attributes of usefulness
10. Is there anything that you expected from the guidelines but was not included?	Any deficiency
11. What added value do you expect from using the guidelines	Any value contribution

The first quality category highlights perceived usefulness through *guidance, simplification, and systemization* in decision making (Qt.1). In this aspect we notice three main attributes that experts identified concerning the quality of the guidelines. They are provision of guidance, simplification, and systemization of and in decision making. We interpret that the perceived guidance helps in addressing the right adoption issues. This aspect is related to effectiveness in TAM (Davis, 1986). The guidelines are also perceived to simplify planning decisions related to addressing the related adoption issues. Finally, the guidelines are perceived as providing a systematic way of addressing adoption issues. Simplification of tasks is one of the attributes of usefulness in TAM. Additionally, we relate the systemization attribute to *doing things in the right way.* This aspect is related to efficiency in TAM. Consequently we observe that the guidelines were perceived to useful because they facilitate effectiveness, efficiency, and simplification of in addressing adoption issues for enhanced e-Government adoption in Tanzania.

Coverage was another usefulness attribute we derived from the interviews (Q.t.2). Respondents observed that the guidelines include most of the issues regarding and relevant to understand and address the adoption of e-Government in Tanzania. The is because activities of identifying, planning for and evaluation of adoptable e-Government initiatives involve gathering a wide range of information. The guidelines facilitate these activities by organising relevant and useful multidimensional information issues for enhanced decision making.

Table 6-6: Issues Concerning the Usefulness of the Guidelines

Issue	***Specific attributes***	***Quote No.***	***Sample quote***
Current usefulness strengths	Provision of guidance that simplifies planning, and evaluation in a systematic way	Qt. 1	*The guidelines are useful in different ways. When you are planning, it is not easy to systematically know what to address. However, with the guidelines you can get focused on specific issues. You can therefore deliver your project faster. Although the guidelines suggest some specific steps to be taken, they also promote innovativeness. This is because they highlight issues that need to be addressed. If some checkpoints are not relevant to you, they you can apply what you think works for you. This simplifies work as I do not need to call a consultant now to tell me what to do (R.4).*
	Wide coverage of adoption issues (scope)	Qt. 2	*…so I find them to be useful. For example, many people focus on infrastructure, but the issue here is not infrastructure only. There are other issues we need to consider in planning such as people issues, organizational issues, and processes. It is possible to do so with the guideless (R.7)*
Required usefulness improvements	Mentioning of access channels	Qt. 3	*An interesting issue was on the suggestion to use multichannel in e-Government service delivery. I think this is an interesting issue especially in Tanzania. However, what are the channels? The guidelines should inform us on the possible channels. For example channels such as access points equivalent to ATMs or kiosks will be helpful (R.7)*
	Coverage of capacity building advice	Qt. 4	*Citizens' preparedness is well addressed on the guidelines compared to Organizational preparedness. The guidelines will be more effective in decision making if they cover capacity building within the organization (R.3)*
	Relating the guidelines to e-Government standardization	Qt. 5	*E-Government implementation needs standardisation. It is not clear yet how the guidelines can help to develop e-Government standards' (R.4)*

We identified three main concerns regarding the usefulness of the guidelines. First respondents recommended further elaboration of the checkpoints concerning accessibility issues (guideline 11). They observed that it is important to explain and propose possible channels that may improve access to e-Government services (Qt. 3). The second concern was on the inclusion of capacity building in the list of checkpoints for organizational preparedness (Qt. 4). The third issue regarded the need to link the

guidelines with the concept of standards in e-Government (Qt. 5). We discuss how we addressed these issues in section 6.3.4.

6.3.2 Evaluation of the usability of the guidelines

Usability insights from questionnaire

The results of the evaluation are presented in Table 6-5. They show that learnability of the guidelines (Q.10, 14, & 17) had *m* = 4 and *m* = 1 for positive and negative questions respectively. Efficiency of using the guidelines (Q. 9, 11) was rated at *m* = 4. Memorability of the guidelines was evaluated at *m* = 4 for positive questions, and *m* = 2 for negative questions. Error freeness (Q. 13, 17) scored *m* = 4. The overall support for the positive statements indicated that the attitude of the experts was between *m* = *4* and *5* (COSTECH: *m*=*5;* RITA: *m*=*4;* DAWASCO: *m* = *4*). This indicates a positive attitude concerning the usability of the guidelines. Likewise, negation of the negative statements supported the usability of the guidelines. These questions indicated *m* = *2* and *1*.

Table 6-7: Evaluation of the Usability of the Guidelines

Usability	COSTECH(n=8)			RITA(n=7)			DAWASCO(n=5)		
	$\bar{x}$	σ	m	$\bar{x}$	σ	m	$\bar{x}$	σ	m
12. I will use the guidelines when developing e-Government initiatives	4.50	0.50	5	4.43	0.53	4	4.25	0.50	4
13. It was easy to understand the guidelines	4.50	0.50	5	4.29	0.49	4	3.50	0.58	4
14. Overall I find the guidelines to be usable for developing e-Government initiatives	4.50	0.50	5	4.29	0.49	4	4.25	0.50	4
15. I can communicate the guidelines to other people	4.13	0.33	4	4.14	0.38	4	4.25	0.50	4
16. The guidelines have minimum errors	4.38	0.70	5	3.71	0.76	3	4.25	0.50	4
17. The language used to present the guidelines is understandable	4.50	0.50	5	4.71	0.49	5	4.25	0.50	4
18. I will always seek clarification of the guidelines	2.63	0.99	2	3.57	0.79	4	2.00	1.15	1
19. I was often confused when using the guidelines	1.75	0.43	2	2.14	1.21	1	1.75	0.50	2
20. I do not need professional support in using the guidelines	3.63	0.70	3	2.71	0.95	2	3.25	0.96	4

We noted some interesting insights concerning the usability of the guidelines. First, all respondents from RITA indicated that the larity of the guidelines was an important aspect. Towards this aspect the general attitude was *m* = 3 (Qn. 18). Further clarification revealed that because the concept of adoption and e-Government concepts

were still new to the majority of the respondents support on using the guidelines was inevitable. Therefore, efforts must be made to improve both the clarity of the guidelines, and the support on how to apply them.

The evaluation of the memorability of the guidelines was also a noticeable aspect. This element received *m* = 4 for the positive and *m* = 3 for the negative questions (Qn. 15, 20 respectively). The results indicate that users will still need to frequently consult a guideline document while working. Otherwise, it is easy to forget the relevant guideline specific to each issue. This situation may have been caused by the large number of guidelines (13) and their respective checkpoints (48). In 6.3.4, we suggest on how this aspect can be handled.

Usability insights from interviews

From the interviews we wanted further information concerning the usability of the guidelines in the Tanzanian context. Specifically we focused our inquiry on how the guidelines align with the working environment, the current expertise, the applicability to individual government organizations, and with the various actors involved in e-Government in Tanzania. In Table 6-8 we summarise the main questions we used to elicit the related information. The results are presented in Table 6-9.

Table 6-8: Evaluating Usability in the Application Context in Tanzania

Question	***Focus of evaluation***
21. How do the guidelines fit with the current working procedures in the government sector in Tanzania?	Conformity to government working procedures
22. What are the possible financial implications of introducing the guidelines in the Tanzanian public sector?	Financial implication
23. How will the current expertise of e-Government practitioners constrain to using the guidelines?	Fit in the current expertise
24. How can the guidelines be introduced for used by your government organizations?	Applicability in individual government organizations
25. Is there any other issue that you think may influence the use of the guidelines in the government?	Probing for other contextual usability issues
26. Whom do you expect to be the actual users of the guidelines in Tanzania?	Identification of potential users
27. To which level of decision making will you recommend the guidelines for use?	Identifying the possible application level in organizations
28. Who are other possible users of the guidelines?	Any other potential users

The guidelines were perceived as usable in the government sector. We observed that the guidelines do not conflict with the working practices in the government (Qt. 7). Furthermore, it is possible to use the guidelines with the current level of skills and

expertise available in the government (Qt. 7). This is because the Tanzanian government uses similar approaches in other activities. Therefore, the introduction of the guidelines in the government does not interfere with the way of doing business. In addition, experts in the Government, particularly in decision making levels, are using similar instruments in other aspects of government business. However, e-Government, as well and the guidelines we are proposing are still new innovations in the government. Hence, formalization is needed to make the guidelines part of the government's recognized planning instruments.

Table 6-9: Issues Concerning Usability of the Guidelines

Issue	***Specific elements***	***Quote No.***	***Sample quote***
Current Quality aspects	Fit with the current government working practice	Qt. 6	*The problem is not using the guidelines but the expertise in e-Government. Guidelines are being Developed and used everyday in the government. They come like policies or strategies. Now, because people are using such documents then it should be possible for the guidelines to be used as well (R.5)*
	Fitting with the current skills in the government	Qt. 7	*There are no extra skills required because the guidelines are simple and comprehensible. People are okay with guidelines because they are not the first or last guidelines to be introduced in the government. I believe that the skills are available to allow the utilization (R.2)*
	Justified financial implication	Qt. 8	*I am sure there will be some financial implications in the course of applying the guidelines. But this is not because of the guidelines. It is because of e-Government projects. I think the benefits of using the guidelines are higher than the cost of using them. You can imagine when we do trial and error in planning. The cost is higher than being guided on what to consider (R.4).*
	Ease of use and following due to the list of checkpoints	Qt. 9	*The guidelines are easy to follow hence simplify the decision making process. It is quite easy through the checkpoints to make decision on the issues required for an organization (R. 3)*
Required improvements	Needs for indicators in checkpoint	Qt. 10	*They lack indicators. I expected checkpoints to be items that one can tick off along then implementing, but the ones given look like action items (what to do) (R.8)*
	Explanations on costs and benefits of using the guidelines	Qt. 11	*I think there should be ways of explaining the costs and benefits of using the guidelines. One should be able to understand the reasons of using, and the consequences of not using the guidelines. The guidelines should inform users that by using the guidelines it will be possible to develop e-Government faster and at a lower cost (R.7)*
	Kiswahili version of the guidelines	Qt. 12	*Most of us use Kiswahili in our daily activities. It is important to have a Kiswahili version of the guidelines (D. R.2).*

As we explained in 5.2.2, financial-fit is an important usability aspect of the guidelines. This is because, due to being a low income developing country, and the newness of e-Government, costly e-Government innovations may not be perceived as usable in the government sector in Tanzania. We established that the cost of using the guidelines

was justifiable. Respondents perceived that although there will be some financial implications, particularly for training, such costs are necessary and part of e-Government projects. Return on investment in applying the guidelines can be gained if e-Government initiatives are implemented successfully and adopted by citizens (Qt. 8). This indicates the financial usability strength of the guidelines we are proposing.

The guidelines were also perceived as ease to use and to follow (Qt. 9). Respondents reported that the structure used to present the guidelines was simple and comprehensible. This was facilitated by the matching of each adoption issue with relevant guidelines and checkpoints. This aspect strengthens the usability of the guidelines.

Three issues were recommended for improving the usability of the guidelines. These are 1) the need for indicators in each checkpoint (Qt. 10), 2) elaboration of cost and benefits of using the guidelines (Qt. 11), and 3) a Kiswahili version of the guidelines (Qt. 12). We elaborate and discuss these issues in section 6.3.4.

Insights into usability by actors of e-Government in Tanzania

In this evaluation we wanted to understand the extent to which the guidelines are usable for the various actors we established in 5.2.3. We also aimed at establishing whether the guidelines are generic or more appropriate to a particular type of actors. We used the questions summarized in Table 6-10 to elicit this information from our respondents.

Table 6-10: Evaluating Usability by Actors of E-Government in Tanzania

Key question	Focus of evaluation
26. Who do you expect to be the actual users of the guidelines in Tanzania?	Top decision makers
27. To which level of decision making will you recommend the guidelines for use?	Developers
28. What are other possible users of the guidelines?	Partners

Respondents observed that the guidelines are usable for a wide range of e-Government actors (Qt. 13). However, they also observed that the guidelines are more relevant to middle managers in the government. Middle managers include directors, assistant directors, managers, and senior and principal officers. This is because activities of identifying, planning for, developing, and deploying e-Government

initiatives are done by middle managers. Top managers are more responsible with endorsement, financial approval, and evaluation of the outcomes of the initiatives. We agree with this observation. We observe that the fit to the activities of the actual implementers of e-Government initiatives increases the usability of the guidelines.

Table 6-11: Usability on Users of the Guidelines

Issue	Quote No	Indicative quotation
Most relevant actors	Qt. 13	I recommend the guidelines to all stakeholders of e-Government, but specifically I think they are relevant to middle management of the government. I mean directors, assistant directors, principal officers, senior systems analysis and the like (R.1)

6.3.3 Other issues

In this evaluation, we did not asses the usage of the guidelines. However, during the evaluation process, we identified several issues that may challenge the usage of the guidelines in Tanzania. The issues are 1) introduction and formalization of the guidelines, and 2) the need for endorsement and enforcement by top management, and by an overarching body at a national level. Table 6-12 provides a summary of these issues.

Table 6-12: Prerequisites for Usage of the Guidelines

Issue	Quote No	Indicative quotation
Introduction and formalisation of the guidelines	Qt. 14	*I think the guidelines are useful. However, I should say that at the moment we have not formally utilized all the guidelines. This is because they have not formally been introduced to our Director of Information and the Director General. I think you need to write to them and inform them that the guidelines can be used in our organization and to all ICT related projects. Otherwise they will be only used in ad hoc manner, or not used at all (R.6). The guidelines are okay, but the issue here is translating them in to formal procedures and communication channels of the government. If systems were working well, then it should not be an issue to introduce them to the government (R.1). You should think on how to promote the guideline to be used in various situation by many organizations and individuals (R. 2)*
Need for endorsement and enforcement by top management, and by an overarching body	Qt. 15	*It is important to secure the buy-in of top managers. I would recommend the Chief Secretary. If he says that the guidelines should be used in the government then everyone will be used. Then it is important that technical managers also accept and utilize the guidelines. Otherwise they may be institutionalised but the people who are supposed to use them are not suing them (R.2)*
	Qt. 16	*It is important to inform us on who is responsible to implement and enforce the guidelines' (R. 3). There must be a higher body to enforce the utilisation of the guidelines. Otherwise they may not be used. This also needs to be in live with the support of the top management. If they support the idea, then guidelines will be used in their organizations (R.4).*

The first issue concerns the introduction and formalization of the guidelines to the government and its organizations (Qt. 14). We observed that the guidelines are a new

innovation. Therefore, they need to be introduced to the government through formal channels and procedures of the government. This is particularly important because the guidelines were developed out of internal government circles (commissioning). Hence, it is necessary to introduce and formalize the guidelines in and for the government. Otherwise, the guidelines will not be perceived as a formal instrument for be use within and by the government. This may jeopardize the utilization of the guidelines in the government.

The second challenge relates to endorsement and enforcement. Formal introduction of the guidelines in the government can be achieved. However, it is important that the top management of the government endorses and enforces the guidelines (Qt. 15). It is also crucial that the guidelines are enforced by an overarching government body (Qt. 16). This is necessary because each government organization has its own autonomy (see 4.5.5). Hence, it is important that the use of the guidelines is advocated, enforced, and evaluated by a government body with the mandate to do so within across the government. Such a body should be the owner and enforcer of the guidelines at both the national and organizational levels. Otherwise, the guidelines will be utilized by few daring organizations. In section 6.3.4 we elaborate upon these issues and how we addressed them.

6.3.4 Implication of the evaluation of the guidelines

The objective of the evaluation process was to inform us on the quality of the guidelines we are proposing. Specifically, we wanted to obtain feedback on the usefulness and usability of the guidelines in the Tanzanian context. In the evaluation, we noticed several issues that needed our attention. The issues related to the usefulness, usability, and usage of the guidelines. We elaborate and present how we approached each of the issues.

Implications of the usefulness of the guidelines

In this evaluation we focused on the relevance and the usefulness of the guidelines. Relevance evaluation established the extent to which each guideline was appropriate for approaching a corresponding adoption issue established in this study. This was achieved through rating of items 1.1 to 13.1 in Table 6-3. Results show respondents' positive attitude on the relevance on the guidelines (m >= 4). This indicates that that

the proposed guidelines are relevant to facilitate decision making on approaching each of the adoption issues identified in this study. We therefore observe that, if used, the guidelines are relevant to facilitate designing and deployment of citizen adoptable e-Government initiatives in Tanzania. In turn, this will enhance citizen adoption of the initiatives in the country.

The usefulness evaluation was intended to evaluate the extent to which the set of the guidelines is perceived to add value in the decision-making towards adoptable e-Government initiatives. Specifically we evaluated the extent to which the guidelines are perceived to facilitate efficiency, performance, and effectiveness towards adoptable e-Government initiatives. As shown in Table 6-5, the average perception that the guidelines improves efficiency (Qn. 2, 3, 5), performance (Qn. 1, 7), and effectiveness (Qn. 4, 6, 8), was $m >= 4$ and $m = 1$ for the negative questions. These results show that respondents found the guidelines to be useful. This is indicated by the support of the positive statements ($m >= 4$) and the negation of the negative statements ($m =< 2$). Accordingly, we observe that the guidelines are useful for facilitating decisions that may lead into enhanced adoption of e-Government initiatives by citizens in Tanzania.

The perception that the guidelines are useful was further strengthened by the identification of additional quality attributes from in the interviews (Table 6-6). These attributes are the provision of guidance, and the simplification and systemisation of processes towards adoptable e-Government initiatives. Coverage of various relevant issues was also identified as adding value to the usefulness of the guidelines.

From the interviews we derived three observations concerning the usefulness of the guidelines; 1) the need to mention possible access channels, 2) inclusion of capacity building in organization preparedness, and 3) linking the guidelines to the concept of e-Government standardization.

The first recommendation for improving the usability of our guidelines was concerned the need to mention possible access channels for e-Government in Tanzania. This was a valuable recommendation as it was intended to improve the details of the checkpoints by providing technological specifications that can be considered for e-Government initiatives. However, as we mentioned in 1.1 there are various technologies that can be

used in e-Government initiatives. Further, in 3.4 we highlighted that in Tanzania channels such as mobile phones are more available to citizens than computers. However, each channel has its limitations. For example, while computers are not widely available, mobile phones may not be appropriate for delivering some types of government electronic services. E-Government implementers will still have to balance and consider the level of service sophistication as well as technological potentials of available channels.

We consider the above recommendation from three perspectives. Firstly, an e-Government initiative may be aimed at creating access channels. Secondly, an e-Government initiative may include establishing the electronic services and the means of accessing them. Thirdly an initiative may merely involve developing a certain type of service for the citizens. It is relevant to mention and recommend specific channels for the first possibility. However, to address the second and third possibilities, government organizations will have to strike a balance between widely available channels and the type of services they want to deliver to citizens. Therefore it is relevant to provide advice that can be useful to guide e-Government implementers in both situations. The current guidelines and checkpoints meet this purpose. Therefore, we have retained the current structure and details of the guidelines and their respective checkpoints.

Capacity building aims at the strengthening organizational preparedness through enhancing skills and attitude relevant for e-Government. We observed that this observation was an important contribution from the evaluation. Capacity building through coaching, training, and induction (OECD, 2005) can be useful approaches. These approaches can be used as part of the internal marketing strategy to brand and communicate e-Government and its initiatives. Hence, we include capacity building as one of the checkpoints contributing to the organizational preparedness. We code it as checkpoint 1.7 in Table 6-13.

The relationship between the guidelines and e-Government standardisation was also a useful observation. The standardisation of e-Government initiatives is one of the many dimensions in developing adoptable e-Government initiatives. This issue has been indirectly addressed by several guidelines. For example, guidelines 9 – 11 addresses the need for improved quality of e-Government services. The respective checkpoints

provide proposed criteria through which organizations can improve the quality of their e-Government services. We observe that the set of guidelines we are proposing provide multidimensional propositions concerning the citizen adoption of e-Government initiatives. The need for the development of specific standards for e-Government may not fall within the scope of this study. Future research can utilize our guidelines as a stepping-stone for such an endeavour.

Implications on the usability of the guidelines

In this evaluation we needed feedback on the extent to which the guidelines were perceived as usable. Specifically we wanted to evaluate the learnability, the efficiency of use, the memorability, and error freeness of the guidelines. We also wanted to identify any other usability attributes that may strengthen or compromise the usability of the guidelines. The results (Table 6-7) show that the average perception that the guidelines were we learnable, efficient to use, memorable, and error free was $m = 4$ for the positive questions, and 1 for the negative questions. This illustates the support for the positive usability statements ($m >= 4$), and the negation of the negative statements ($m =< 2$).

The usability of the guidelines was further strengthened by the results from the interviews (Table 6-9). We established that the guidelines did not conflict with the working practises, and available skills in the government. The guidelines were also perceived as a cost effective solution for enhancing e-Government adoption. These results indicate that the proposed guidelines are usable for enhancing the adoption of e-Government initiatives in Tanzania.

The evaluation helped us to identify two usability aspects that needed our attention. These aspects are the clarity and memorability of the guidelines. We learned that respondents were not confident about using the guidelines without seeking clarification and/or, or frequently consulting the guidelines source. This concern may have been highlighted because the guidelines were still new. The use of the guidelines overtime may improve the situation. Nevertheless, we revised the guidelines to reduce any confusion. We also revised the presentation format look and numbering to simplify referencing (Table 6-13). We also observe that the discussion we present in chapter 5 will facilitate the availability of comprehensive support for the use of the guidelines.

We also derived three recommendations to improve the usability of the guidelines from the interviews. They are 1) the need for indicators in each checkpoint, 2) elaboration of cost and benefits of using the guidelines, and 3) the need for a Kiswahili version of the guidelines. We discuss and address each of these issues in the following section.

The need to elaborate how each checkpoint is valuable observation. This means that each checkpoint will need to have sub-checkpoints on how it can be achieved. This will ensure that e-Government implementers obtain fine propositions for their decision making activities. We observe that this valuable suggestion can be achieved. However, to avoid complexity of propositions the activity will require more research and evaluation of the resulting sub-checkpoints. This will need more time and resources. We recommend that this activity can be done in future studies. We observe that the elaboration made in chapter 5, is appropriate. It can therefore be used to guide decision making for enhanced e-Government adoption. However, we have revised the structure of the guidelines presented in Table 5-4. We have added a new column to facilitate assessing conformity to the guidelines and checkpoints. This will allow users to assign a 1 or a 0 (see 5.3.2) to indicate whether a checkpoint has been fulfilled or not (Table 6-13).

Another recommendation was the need to explain the costs and benefits of using the guidelines. Respondents wanted to understand the advantages they should expect and related costs if they apply the guidelines in their organizations. This is also a valuable observation. However, the issue is well addressed in Chapter 5. The guidelines are aimed at facilitating decisions that matter in identifying, developing, and deploying e-Government initiatives (5.3). This will contribute into avoiding the risk of failure of e-Government initiatives in Tanzania (see 1.6). From this evaluation we have established that the guidelines have justifiable cost. Involved cost may involve capacity building towards using the guidelines (6.3.2). However, this cost is normally included in any new-e-Government project and is justified from the benefits gained from using the guidelines.

We relate the need for Kiswahili version, availability of support, and promotion of the guidelines to the localisation concept (Osborn, 2004). Proponents of ICT localisation

advocate provision ICT solutions with local language and support capabilities. A typical example is the project for customisation of Linux operating system into Kiswahili (Kilinux) in Tanzania (Kachale, 2008). However, content localisation requires more resources (time, partnership and funds) for successful delivery of localised products. For instance, the Kilinux project involved the University of Dar es Salaam, Baraza la Kiswahili la Taifa[13], and Swedish Development Agency (SIDA). After more than five years, the project is still going on.

The localisation of the guidelines is relevant for improving the usability of the guidelines. A Kiswahili version of the guidelines will improve ease of use and promote the usage of guidelines to a wider population of intended users. Less support will also be necessary when applying the guidelines. However, because of the required resources (time, money, partnership, and expertise), this activity falls beyond the scope of this project. We therefore recommend this issue for future improvement of the guidelines.

Implications on usage of the guidelines

From the evaluation we learned that the guidelines we are proposing may not be used if three main conditions remain unaddressed (6.3.3). They are 1) introduction and formalization of the guidelines, 2) the need for endorsement and enforcement by top management, and by an overarching body at a national level. We discuss and provide recommendations concerning these issues.

The introduction, formalization, and enforcement of the guidelines are important prerequisites to facilitate the usage of the guidelines in the government sector. This is due to the fact that the guidelines were developed from a setting other than the formal commissioning of the government. This is particularly important in Tanzania because the government follows established regulations and standing orders. Therefore, it may be difficult for e-Government practitioners to individually adopt the guidelines and use them in formal government activities. However, the formalization, endorsement and enforcement by top management must still be secured within the government. This should be initiated by those involved in the actual identification, deployment, and evaluation of e-Government initiatives. From this evaluation, we learned that those

[13] In English this means the National Kiswahili Council

involved in identifying, deploying and evaluation of e-Government are the middle managers in the government (6.3.2). Middle managers should acknowledge and champion the introduction, and seeking of endorsement and enforcement of the guidelines in the government and individual government organizations. This will increase the awareness of the guidelines, and increase their usage.

It is also necessary that the ownership, advocacy, and enforcement of the usage of the guidelines is taken by a body responsible for the ICT projects of the government. This will help overcome the barriers posed by organizational autonomy (4.5). At the time of this evaluation, there was no government organization that was responsible for enforcing e-Government. However organizations such as the President's Office Public Service Management department, and the Ministry of Communication, Science, and Technology could be the relevant organizations. The former (see 1.4) is responsible for e-Government; the latter is deals with countrywide cross-sector ICT initiatives. Ownership, endorsement, enforcement, and advocacy by such bodies would facilitate the utilisation of the guidelines across the government.

6.4 Summary

In this chapter, we have presented the process and the results of evaluating the guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania. The process follows the recommendations given by Hevner (2007) concerning the introduction of a needed IT artefact in a particular business context. The evaluation aimed at establishing the quality of the guidelines focusing on usefulness and usability criteria (Keen & Sol, 2008). The results show that the guidelines are relevant, useful and usable for facilitating the processes of identifying, developing and deploying citizen-adoptable e-Government initiatives in Tanzania (6.3.2, 6.3.3). The evaluation informed us of various issues that needed our attention in order to improve the usefulness and usability of the guidelines. We elaborated upon the issues and addressed them in this chapter (6.3.4). Some of the issues could not be resolved in this study. However, they do not jeopardize the present quality of the guidelines. We have recommended these issues as activities for future improvements. Nevertheless, the scope and the main objective of this study have been reached. We will summarize the refined set of guidelines for enhancing citizen adoption e-Government in Tanzania in Table 6.13 below. In chapter 7, we will reflect on the whole process of this research

and its output. We will also provide recommendations for further and future improvement.

Table 6-13: Refined Guidelines for Enhancing the Adoption of E-Government in Tanzania

Issue	Sub-issue	No.	Guideline	Checkpoints		Conformity
Organizational preparedness	Organizational-wide buy in	1.	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	1.1.	Establish an internal champion	
				1.2.	Conduct awareness and branding campaigns	
				1.3.	Demonstrate of visible benefits/success	
				1.4.	Develop a coaching programme	
				1.5.	Ensure Internal stakeholders involvement	
				1.6.	Provide incentives to encourage internal e-utilization	
				1.7.	Develop and conduct a capacity building programme	
	Adequacy of processing machinery	2.	Ensure that policies, practices, and processes support and formalize electronic communication	2.1.	Review legal, regulatory, and process frameworks in favour of ICT	
				2.2.	Promote internal ICT skills	
				2.3.	Promote interdepartmental collaboration	
Citizens preparedness	Affording to pay-for	3.	Provide e-Government services through multi-channels	3.1.	Exploit the potentials of locally widely available channels	
				3.2.	Lower the access transaction cost	
	Awareness of existing services	4.	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally	4.1.	Deliver highly demanded services	
				4.2.	Conduct awareness and branding campaigning	
				4.3.	Demonstrate visible benefits/success	
				4.4.	Involve stakeholders	
				4.5.	Engage social intermediaries	
	ICT skills	5.	Ensure simplicity of the contents and technologies used in delivering e-Government services	5.1.	Observe ease of use	
				5.2.	Identify and deliver services through locally widely available ICT channels	
				5.3.	Ensure help is available	
	Preference for face-to-face communication	6.	Promote the ability to receive public services without having to interact with members of the service provider's staff	6.1.	Provide incentives to encourage electronic communication	
				6.2.	Prioritize electronic communication	
				6.3.	Increase options for electronically delivered services	
	Age	7.	Determine user profiles-service needs to facilitate services customisation	7.1.	Identify specific potential users	
				7.2.	Identify and deliver the highly demanded services	
				7.3.	Deliver though multi-channels	
				7.4.	Ensure ease of use	
Service issues	Information quality	8.	Ensure that the quality of the content provided to citizens meets	8.1.	Use international guidelines for content development (e.g. W3C guidelines)	

Table 6-13: Refined Guidelines for Enhancing the Adoption of E-Government in Tanzania

Issue	Sub-issue	No.	Guideline	Checkpoints	Conformity
			and/or exceeds their expectations	8.2. Define and adopt clear content and systems quality measures	
				8.3. Emphasize on services that can save time and money	
				8.4. Ensure completeness, ease-of-use, usefulness, and up-to-datedness	
				8.5. Adopt a multi-lingual approach (Kiswahili and English)	
				8.6. Provide feedback mechanism	
				8.7. Conduct frequent content evaluations	
	Website quality	9.	Ensure that the quality of the channel/system provided to citizens meets and/or exceeds their expectations	9.1. Use international guidelines for system development (e.g. W3C guidelines)	
				9.2. Define clear content quality measures	
				9.3. Provide system functionalities that add value (e.g. search-ability and a multilingual approach)	
				9.4. Ensure user friendliness, ease of use	
				9.5. Ensure reliability and dependability	
	Generic service quality	10.	Ensure adequate responsiveness, usefulness, and systems integration in e-Government initiatives	10.1. Emphasize responsiveness to user enquiries	
				10.2. Ensure service and system availability	
				10.3. Foster internal and external systems integration for service completeness	
Access issues	Adequacy of ICT networks and availability of access equipment	11.	Adopt the multi-channel strategy for accessing e-Government services	11.1. Improve access ICT infrastructure	
				11.2. Adopt citizen-focused ICT multi-channelling approach	
				11.3. Exploit the potentials of the available infrastructure	
				11.4. Use intermediaries	
Organizational Context	Limitation of responsibilities	12.	Establish inter organizational and intra organizational collaboration	12.1. Establish intra and inter organization collaboration mechanism	
	Nature of the organization and its business	13.	Determine the perceived public image of the organization	13.1. Foster for a supportive perceived public image organization	

Chapter 7
Epilogue

In this research, we recognized that e-Government has the potential to facilitate social and economic improvement in developing countries. Such an advantage can be attained if e-Government initiatives will be adopted by citizens. Designing and deploying e-Government initiatives that are likely to be adopted by citizens is important, but also challenging. This is particularly the case in a developing country context. In this study, we aimed at providing support for enhancing the citizen adoption of e-Government initiatives in Tanzania, a typical developing country. In the previous chapters, we presented the activities, findings and propositions that helped us to achieve our objective. In this chapter, we will reflect upon the whole research process and its results. Finally, we will present our recommendations for potential future research areas.

7.1 Introduction

In the previous chapters, we presented the objective, activities and results of this study. We stated that we aimed at facilitating the decision-making processes that may lead to the deployment of citizen-adoptable e-Government initiatives. We achieved this objective by identifying various issues influencing the citizen adoption of such e-Government initiatives in Tanzania. This helped us understand the problem regarding the citizen adoption of the initiatives in this country. We established that the degree of citizen adoption of e-Government initiatives in Tanzania is still low. Therefore, we developed and evaluated a set of guidelines for enhancing citizen adoption of the initiatives in Tanzania. In this chapter, we will present our reflections upon the research process. We will start with the reflection of the research process in section 7.2. We will then discuss the key research limitations of this study and the related recommendations in section 7.3. Finally, a brief summary will be presented at the end of the chapter (7.4).

7.2 Reflection of the research process

In chapter 1, we argued that design science was the fitting philosophy for this study. According to Hevner (2004), a comparable philosophy that is applicable in IS research is the behavioural science paradigm. However, behavioural science research seeks to develop and justify theories that predict and explain human and organizational

phenomena surrounding information systems (March & Smith, 1995). Behavioural science places little emphasis on evaluating research output. This emphasis is put abreast in the design science philosophy. As we wanted to develop a solution applicable in Tanzania in this study, the evaluation of our solution was important. Accordingly, we found that design science was suitable for guiding our study.

Design science philosophy articulates seven guidelines for evaluating IS research. We will utilize the design science guidelines suggested by Hevner (2004) to guide our reflection. According to Hevner (ibid.), design science research must create an innovative artefact. The resulting artefact must be evaluated to establish its utility. It must also be developed in order to solve a business problem in an efficient and effective manner. The presentation of the research must be rigorous, formal and coherent. The process of developing the artefact must be interactive and must be balancing between ends, means and laws. Finally, the results of the research must be communicated effectively. We summarize the guidelines in table 7-1 and present our evaluation in the following sections.

Table 7-1: Design Science Research Guidelines

Guideline	Description
Guideline 1: Design as an artefact	Design-science research must produce a viable artefact in the form of a construct, a model, a method or an instantiation
Guideline 2: Problem relevance	The objective of design-science research is to develop technology-based solutions to important and relevant business problems.
Guideline 3: Design evaluation	The utility, quality, and efficacy of a design artefact must be rigorously demonstrated via well-executed evaluation methods.
Guideline 4: Research contributions	Effective design-science research must provide clear and verifiable contributions in the areas of the design artefact, design foundations, and/or design methodologies.
Guideline 5: Research rigor	Design-science research relies upon the application of rigorous methods in both the construction and evaluation of the design artefact.
Guideline 6: Design as a search Process	The search for an effective artefact requires utilizing available means to reach desired ends while satisfying laws in the problem environment.
Guideline 7: Communication of research	Design-science research must be presented effectively both to technology-oriented as well as management-oriented audiences

Source: Hevner (2004)

7.2.1 Research artefact

Guideline 1 of design science research emphasizes the production of a viable artefact in the form of a construct, a model, a method or an instantiation. These artefacts are

aimed at providing ways and tasks with which business problems can be solved. In this study we produced a method in the form of guidelines. The guidelines are aimed at facilitating decisions that may lead to enhanced citizen adoption of e-Government initiatives in Tanzania. We presented the guidelines in chapters 5 and 6. We observe that by producing the guidelines, our study meets the requirements of guideline 1.

7.2.2 **Problem relevance**

The objective of our study was to understand and solve the business problem related to the citizen adoption of e-Government initiatives. We established that the citizen adoption rate of e-Government initiatives in Tanzania is low. This problem may result in the failure of the initiatives in this country. Accordingly, we developed guidelines aimed at enhancing the citizen adoption of e-Government initiatives in Tanzania. In this regard, we developed a technology-based solution (the guidelines) for an important business problem (the low adoption rate of e-Government initiatives). We presented the problem description in chapter 4, and the solution in chapters 5 and 6. This conforms to guideline 2 of design science research.

7.2.3 **Design evaluation**

Guideline 3 of design science research requires that a new artefact should be evaluated for its utility, quality and efficacy. In this research, we evaluated our solution by means of a well-executed approach (chapter 6). The evaluation of the guidelines shows that the guidelines are relevant, useful and usable. These attributes indicate that the guidelines we propose can effectively and efficiently facilitate the implementation of citizen-adoptable e-Government initiatives in Tanzania. We observe that, in this way, we fulfilled the requirements of guideline 3.

7.2.4 **Research contributions**

Guideline 4 of the design science approach emphasizes that research should provide clear and verifiable contributions. Our results provide a better understanding of enhancing citizen adoption of e-Government initiatives in Tanzania as well as ways to do so. Prior to this study, no empirical information was available concerning the degree of adoption, the issues that may explain the situation, and the ways of achieving a high degree of adoption of e-Government initiatives in Tanzania. This research conforms to guideline 4 by providing a contribution to theory, context and practice. Accordingly, this

satisfies the requirements of guideline 4 of design science research. We will discuss these contributions and provide a summary in Table 7-3.

In chapter 2, we explained various theoretical contributions regarding the adoption of e-Government (see Table 2-1). We acknowledged their value, but also highlighted their limitations with regard to explaining and facilitating citizen adoption in developing countries. In this section, we will present the key contributions of our study to the existing theory. More specifically, we will highlight the contribution of each adoption issue and the respective guidelines we developed in this study.

We contribute a new understanding as well as guidelines regarding the preparedness of government organizations for the adoption of e-Government initiatives. Previous studies present related issues such as senior management buy-in, adequacy of legal framework and business processes. In this study, we redefine this understanding. We argue that citizens' adoption decisions are influenced by the extent to which government organizations appear to be prepared to provide services electronically. The literature does not provide specific strategies for approaching this issue. Accordingly, in this study, we propose specific guidelines on how to improve organizational preparedness and thus enhance the adoption or e-Government initiatives.

The literature presents citizen-related issues in varied and discrete ways. In this study, we contribute a new category: citizen preparedness. With this category, we suggest that the preparedness of the citizens must be taken into consideration when developing e-Government initiatives. In this way, we propose a generic adoption construct. E-Government implementers can then establish specific issues contributing to the preparedness of citizens in their particular contexts. In this study, we propose specific issues and their respective guidelines for approaching citizen preparedness in Tanzania. The respective guidelines provide a new theoretical understanding of citizen preparedness to enhance e-Government adoption and possible ways to approach citizen preparedness.

In this study, we further extend the understanding of the intrinsic characteristics of e-Government initiatives and adoption. Existing theories present service issues in two dimensions only: content and container. Our findings extend the current theoretical

propositions by proposing generic issues. We argue that the characteristics can be understood from three main dimensions, namely content, container and generic issues concerning e-Government initiatives. The content issue refers to the factors regarding the information (content) being offered in electronic form, while the container issue relates to the system of delivery (e.g. the website). Generic service characteristics encompass factors that relate to the mode of delivery. In the Tanzanian context, we established that usefulness, convenience and responsiveness are important when government services are delivered electronically. This new understanding, and the respective guidelines we propose, provides our key contribution to theory regarding service-intrinsic issues.

Existing theories recognize the importance of adequacy of the access infrastructure to facilitate the adoption of e-Government initiatives. However, our findings differentiate infrastructure limitations from the lack of access equipment. In the case of Tanzania, in general, the country's ICT infrastructure is poor. However, alternative channels such as mobile phones, TV and radio are widely available. Organizations should not be hindered from implementing e-Government initiatives for citizens. E-Government initiatives can be designed to be delivered and accessed using such alternative equipment. In this contribution, we highlight the possibility of mitigating the current ICT infrastructure inadequacy by using alternative access channels.

In this study, we introduce a new construct in technology adoption, namely *organizational context*. Existing theories did not link this issue to the adoption of e-Government initiatives. Specific aspects contributing to this issue are the *nature of the government organization*, and organizational autonomy. We related the nature of government organization to the concept of organizational image (Christensen & Askegaard, 2001, The Economist, 2008). Corporate image influences the customers' perception of a business organization and its services/products (Gray & Balmer, 1998). Furthermore, the findings most closely related to *organizational autonomy* are those by Gil-Garcia & Pardo, 2005, and EOCD (2003, p. 48). This is because the issue is not directly related to the willingness to adopt innovation. However, as we observed in this study, each organization has limitations of responsibility in relation to its electronic services. We observe that, by proposing these issues and the related guidelines, we have contributed to e-Government adoption theory.

Table 7-2: Summary of Findings and Fontributions

S/N	Category	Subcategories	What is known (Theoretical)	Our contribution
1.	Purpose	1. Citizen adoption in Tanzania	• Limited knowledge exists on the concerning citizen adoption of e-Government initiatives in Tanzania	• We have investigated adoption issues from a citizens perspective in a developing country; Tanzania
2.	E-Government evolution stage in Tanzania and degree of citizen adoption	1. Between information and interaction level 2. Adoption degree is low	• Limited knowledge exists on e-Government level of evolution and adoption in Tanzania. only implied information is available in reports such as UN (2008)	• We established that e-Government in Tanzania is found between the information and interaction levels, and that the degree of citizen adoption of e-Government initiatives is still low
3.	Adoption of e-Government initiatives in Tanzania	1. Organizational preparedness 2. Citizens preparedness 3. Service intrinsic issues 4. Access limitations 5. Organizational Context	• Discrete factors are presented in general adoption (e.g. Rogers, 2003; Davis, 1989) and e-Government theories (e.g. Carter & Weerakkody, 2008; Kalu, 2007) • Limited knowledge exist on how adoption issues can be approached	• We identified multi-dimensional categories influencing citizen adoption of e-Government initiatives in Tanzania • Nature of the organization and its business, and organizational autonomy are new additions to the e-Government adoption theory • We designed guidelines onhow the issues can be addressed
4.	Government preparedness	1. Organizational-wide buy-in 2. Adequacy of internal processing machinery	• Senior management buy-in (Lam, 2005) • Importance of legal framework, and business processes (Ebrahim & Irani, 2005)	• We discovered that citizens' perception concerning the preparedness of a government organization to serve them electronically influences their adoption decision. • We proposed departure from senior manager buy-in to organizational-wide buy-in advocacy
5.	Citizen preparedness	1. Financial affordability 2. ICT skills 3. Awareness of the services 4. Preference for face-to-face communication 5. Age	• Most of the issues in this category were not new. (e.g. Choudrie & Dwivedi, 2005; Kumar et al., 2007; Mofleh & Wanous, 2008, Seifert & McLoughlin, 2007; Thomas & Streib, 2003; Venkantesh et al., 2003).	• We categorised the discrete citizen-centred adoption issues into citizen preparedness. We also confirmed that the five subcategories are the most relevant factors in the Tanzanian setting
6.	Service issues	1. Characteristics of information 2. Characteristics of website 3. General service characteristics	• Contents and systems characteristics are important for adoption (e.g. Wangpipatwong, Chutimaskul & Papasratorn, 2005; Warkentin et al., 2002)	• The relationships between e-Government adoption and the information, website, and general service characteristics are not new. However in this study we learned that characteristics can be categorised into three dimensions; contents, system, and generic characteristics
7.	Access limitation	1. Adequacy of ICT networks 2. Availability of access equipment	• Poor infrastructure condition limits access to the internet, and electronic services including e-Government (Kalu, 2007)	• We found that inadequate access limits citizens to adopt. Differentiation between ICT network inadequacy, availability of equipments, and inadequacy of supporting infrastructure is a valid contribution
8.	Organizational Context	1. Nature of organization and its business 2. Organizational autonomy	• Limited knowledge exists on the relationship between of these issues and e-Government adoption	• The association of these factors to e-Government adoption is a new contribution

We have presented issues and their respective guidelines for enhancing e-Government adoption in a developing country, Tanzania. The issues and guidelines are inherent to perspectives from our research context and from the literature. Consequently, the applicability of the guidelines may be generic, specific to developing countries, and/or to Tanzania. We will indicate whether the guidelines can be applied in developed as well as developing countries, whether they are specific to developing countries, or whether they are specific to Tanzania (Table 7-3).

Table 7-3: Contextual Applicability of the Guidelines

No	Guideline	Generic	Developing countries	Tanzania specific
1	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	X		
2	Ensure that policies, practices, and processes support and formalize electronic communication	X		
3	Provide e-Government services through multi-channels		X	
4	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally		X	
5	Ensure simplicity of contents and technologies used in delivering e-Government services		X	
6	Promote the ability to receive public services without having to interact with members of the service provider's staff		X	
7	Determine user profiles-service needs to facilitate services customisation		X	
8	Ensure that the quality of the content provided to citizens, meet and/or exceeds their expectation	X		
9	Ensure that the quality of the channel/system provided to citizens, meet and/or exceeds their expectation	X		
10	Ensure adequate responsiveness, usefulness, and systems integration in e-Government initiatives	X		
11	Adopt the multi-channel strategy for accessing e-Government services		X	
12	Establish inter and intra organizational collaboration			X
13	Determine the perceived organizational public image			X

Guidelines 1, 2, relate to the preparedness of government organizations, while 8, 9, and 10 relate to service intrinsic issues. As we presented before, previous studies have highlighted the importance of these issues. Accordingly, we observe that the issues are generic. They are relevant and applicable to developed as well as developing countries. Accordingly, the resulting guidelines are generic. Government in developed and developing countries can therefore use our guidelines to assess and improve their preparedness, and services intrinsic issues for higher adoption of their e-Government initiatives. This will help them to customise their initiatives and strategies to meet expectations of their citizens. In turn, this will facilitate the adoption and success of e-Government initiatives.

Guidelines 3, 3, 4, 5, and 7 relate to citizen preparedness, and guideline 11 is aimed at addressing access limitation issues. These issues are typical for developing countries. We developed the respective guidelines aiming at mitigating the challenges posed by these issues in those countries. Therefore, we observe that the respective guidelines are more applicable to developing countries context.

Organizational context category was a new issue we learned in Tanzania. We did not find many theories relating to this issue. We observe that, aspects such as organizational autonomy and the nature of government originations are historical and therefore contextual. Hence, this issue may be typical to Tanzania. Accordingly the related guidelines 12 and 13 are more applicable to Tanzania.

In section 5.2.3 we identified various actors of e-Government initiatives in Tanzania. They are sponsors, decision makers and developers, partners, and consultants, and users of e-Government initiatives. We consider them as the stakeholders of e-Government in Tanzania. The output or these studies benefit the stakeholders in various ways.

Sponsors of e-Government may benefit from our results. Sponsors of e-Government in Tanzania are involved in funding and supporting the implementation of e-Government and related initiative. They include international organization such as the World Bank, European Union, and the private sector. The guidelines provide them with information they can use to evaluate proposals and reports concerning e-Government initiatives. This may help them to identify strengths and deficiencies prior and after the funding of the initiatives. This may help them to prioritise, direct, and advise the government concerning e-Government initiatives with high likelihood of being adopted by citizens.

Our results are important to decision makers and developers of e-Government initiatives. These stakeholders have the sole responsibility of successfully implementing e-Government initiatives. The results provide them with a working tool for identifying and addressing issues relevant for achieving high citizen adoption. This facilitates decision-making during planning, development, and evaluation of new and existing e-Government initiatives. This provides a stepping stone for implementing citizen-adoptable e-Government initiatives. Successively, this will contribute in reducing the risk of failure of e-Government initiatives.

Consultants and partners are involved in e-Government through public-private partnership. They support e-Government by providing expertise and support by commissioning and on behalf of the government. Because of this involvement, the results of this study provide them with information concerning citizen adoption of e-Government initiatives. This can facilitate them when engaged in assignments aiming at deploying citizen focused e-Government initiatives. The information can facilitate processes of bidding for, developing, implementation, and collaborating, and evaluation decisions related to e-Government initiatives. In conclusion, citizens are more likely to receive initiatives which meet their expectations, hence high adoption.

7.2.5 **Research rigor**

The process of developing our solution, the guidelines, was rigorous. This is demonstrated by the various activities conducted in this research. Specifically, we consulted existing literature to gain theoretical insights (chapters 1 & 2). Further, we interacted with the application domain to establish the problem, and gain insights regarding the requirements of our solution (chapter 3 and 4). We then utilized the resulting understanding and insights to develop our artefact, the guidelines (chapter 5). Further, we evaluated our solution in the application domain to establish its utility (chapter 6). In addition, we applied multiple instruments to facilitate our study. Finally, we reflect and evaluated the research process in this chapter (7). We summarise them in Table 7-4. The activities and instruments we utilized help our research to conform to guideline 5 of the design science research.

7.2.6 **Design as a search process**

In this study we understood that were investigating a business problem in the public sector of a developing country, Tanzania. We were also aware that e-Government is a new innovation in our research context. We aimed at facilitating e-Government adoption the country. These aspects explain some laws applicable in our research context. Accordingly, we designed appropriate approaches (e.g. phases), instruments (exploration and case studies), and utilized various techniques to facilitate us in achieving our goal. Our research process and activities conform to guideline 6 of the design science research.

Table 7-4: Summary of Research Instruments

Activity	Data sources	Instruments used
Initiation phase (Chapter 3)	Practitioners, users and nonusers, international experts, observations, literature	Interviews, FGDs, observations and literature review
Case study phase (Chapter 4)	Model from phase I, Practitioners, users and nonusers, international experts, observations, literature from Cases 1, 2 & 3	
Solution development phase (chapter 5)	Refined conceptual model from Phase II, Literature, practical experience, & interpretation	Interpretation of case studies results, and literature review, received wisdom
Solution evaluation (Chapter 6)	Questionnaire	Experts' opinion from case 4, 5, & 6

7.2.7 **Communication of research**

We communicate the process and outputs of this research in this thesis book. In this way, we provide both technology-oriented and managerial audiences with information related to adoption of e-Government initiatives. We describe the problem, the problem solving process, and the proposed solution. Accordingly, researchers, and practitioners are informed in their activities.

The completion of this thesis conforms to guideline 7 of the design science research.

7.3 Limitations and recommendations for future research

In the course of this research, we learned a number of issues that need further attention. If addressed, they will advance our understanding of e-Government, e-Government adoption, and ways of approaching e-Government adoption in developing countries. However, because of time and resources limitations, we were not able to address them in this study. In this section, we present the issues and how they can be addressed in future research.

In chapter 3 and 4 we discussed the current degree of e-Government adoption in Tanzania. We used qualitative explanation to elaborate the current adoption situation in the country. We also used web hit statistics to indicate the utilization level. We did so because it was difficult to establish quantitative measure of the utilization of government electronic services. Currently, there are no established metrics to measure the adoption degree of e-Government initiates. The current e-Government progress reports (e.g. UN, 2008) do not cater for this purpose. We were also unable to find any literature discussing the concept of degree of adoption. This is an important limitation. We observe that metrics for measuring the degree of e-Government adoption are important. Availability of such tools may facilitate in measuring the extent of adoption of e-Government initiatives. This may help in prioritising strategies for approaching e-Government at different levels of adoption. This observation leads into the following recommendation:

Recommendation 1: *Develop appropriate metrics to measure the degree of adoption.*

In this study we used the exploratory strategy to identify issues potential to influence e-Government adoption in Tanzania. We also used a limited number of cases. This approach may limit the revelation of other subtle issues potential to influence e-Government adoption. For instance, in our results we did not include cultural issues. However, the emergence of the preference for face to face communication indicates the possibility of the existence of other culture related factors. In addition, in the past, Tanzania was a socialist country. This may have influence on the way citizens perceive and communicate with the government. Such issues were not studies in this research. We observe that strategies using a larger number of cases may be help to verify our results and the guidelines. This may also help to reveal more contextual issues potential to influence adoption of e-Government initiatives in Tanzania. We therefore recommend the following approach:

Recommendation 2: *Verify the outputs of this study using a larger number of cases.*

In this study, we identified various issues influencing the adoption of e-Government initiatives by the citizens in Tanzania. We presented the issues as they related to the adoptability of the initiatives. We did not describe how the issues relate, and influence each other. We also did not investigate their cumulative influence to citizen adoption of e-Government initiatives. The understanding of how the issues relate to each other and their influence to adoption can enhance our understanding of e-Government adoption initiatives. Therefore we recommend that:

Recommendation 3: *Investigate the interrelationship between various adoption issues.*

In chapter 5 we used literature and other resources to develop our guidelines. A specific area that attracted our attention was on improving organizational-wide buy in. We learned that internally and externally oriented marketing strategies for e-Government initiatives are important. However, marketing of government electronic initiatives have received researchers' minimum attention. This indicates that governments do not have sufficient information on how to market and promote public sector electronic initiatives. This leads us in to highlighting the importance of investigating how government can approach the issue of marketing and promoting their electronic initiatives.

Recommendation 4*: Investigate and evaluate how governments can market and promote their electronic initiatives to internal and external stakeholders.*

Following the work of Keen and Sol (2008) the utility of decision enhancement artefacts is determined by usefulness, usability, and usage. In this study we evaluated the usefulness, and usability of the guidelines. We were unable to test the usage of the guidelines. This activity required a sustained application of the guidelines to determine their usage in decision making. Additionally, the guidelines were evaluated using expert opinions. The quality of the guidelines would be enhanced if they could be tested through action research. This would help to establish their effectiveness in enhancing citizen adoption of particular e-Government initiatives. Possible evaluation environment would be during inception, design, implementation, and evaluation stages of e-Government initiatives. This would provide information on the actual impact of the guidelines on enhancing citizen

adoption of e-Government initiatives. This would have helped us to take corrective measures to address any usage related issues that may arise. We therefore draw the following recommendation:

Recommendation 5: *Investigate the usage of the guidelines to determine their impact in enhancing decisions during inception, design, of e-Government initiatives.*

During the evaluation phase (see 6.3.4) we establishes the need for improving the usefulness of the guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania by incorporating the concepts relating to e-Government standardisation. Because we could not address this issue in this study, we recommend it for future studies.

Recommendation 6*: Investigate and enrich the guidelines with the e-Government standardisation concept.*

We established, from the evaluation phase, that the checkpoints of the guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania need further refinement. This will enhance the usability of the guidelines especially to managers in the government. However, in this study we were unable to proceed with the processes and activities for that would lead into further refinement. We recommend this activity as a future activity.

Recommendation 7*: Refine and evaluate the checkpoints of each of the proposed guidelines.*

From the evaluation phase we learned that a Kiswahili version of the guidelines we are proposing is important in the Tanzanian context. However, this could not be developed in this study. This activity requires additional partnership, time, and other resources to be completion. The resulting

version would also require additional evaluation to test its usability. Because we were unable to address these issues, we recommend them for future improvement.

Recommendation 8: *Develop and evaluate a Kiswahili version of the guidelines for enhancing citizen adoption of e-Government.*

7.4 Summary

In this chapter we aimed at providing a critical evaluation of our study. Our reflection involved reciting the key outputs, and the approach we used to in this study. We also discussed theoretical and practical contributions that our results provide. Finally, we have provided the limitations and recommendations for future studies. We observe that the key objective of this study has been achieved. This chapter marks the successful completion of our study.

References

Affisco, J., & Soliman, K. (2006). E-Government: a strategic operations management framework for service delivery. *Business Process Management,* 12, (1), 13-21.

AGIMO (2009). *Better Practice Guidelines, Volume 2: Website Authentication*. Commonwealth of Australia.

Aichholzer, G., & Schmutzer, R. (2000). *Organizational challenges to the development of electronic government.* Paper presented at 11th International Workshop on Database and Expert Systems Applications. London: IEEE Computer Society.

Al-Adawi, Z., Yousafzai, S., & Pallister, J. (2005). Conceptual Model of Citizens' Adoption of E-Government. *Paper presented at the Second International Conference on Innovations in Information Technology*. Cardiff University, Wales.

Al-Qeisi, K.I. (2009). *Analyzing the Use of UTAUT Model in Explaining an Online Behaviour: Internet Banking Adoption.* PhD Thesis. Brunel University.

Ajzen, I. (1985). From intentions to actions: a theory of planned behaviour. in Kuhl, J. and Beckmann, J. (Eds). *Action Control: From Cognition to Behaviour*. New York: Springer Verlag.

Ajzen, I. & Fishbein, M. (1980). *Understanding Attitudes and Predicting Behaviour*. Englewood Cliffs, New Jersey: Prentice-Hall.

Al-Shafi, S. (2009). Free Wireless Internet Park Services: An Investigation of Technology Adoption in Qatar from a Citizens' Perspective. *Journal of Cases on Information Technology*, 10 (3), 21-34.

Anderson, B. (2002). The Domestication of Information and Communication Technologies. Ipswich: Chimera.

Bagozzi, R. (2007). The Legacy of the Technology Acceptance Model and a Proposal for a Paradigm Shift. *Journal of the Association for Information Systems,* 8(4), 244-254.

Bana, B., & Shitindi, E. (2009). Performance Management: Tanzania's Experience. *A Paper Presented at the Conference on Governance Excellence: Managing Human Potential*. Arusha.

Basu, S. (2004). E-governmnet and Developing Countries: an Overview. *International Review of Law Computers and Technology*, 18 (1), 109-132.

Belanger, F., & Hiller, J. J. (2006). A framework for e-government: privacy implications. *Journal of Business Process Management*, 12(1), 48-60.

Bevan, N., & MacLeod, M. (1994). Usability measurement in context. *Behaviour and Information Technology,* (13), 132-145.

Bhatnagar, S. (2004). *E-Government from Vision to Implementation: a practical guide with case studies.* New Delhi: Sage.

Bommier, A., & Lambert, S. (2000). Education Demand and Age at School Enrolment in Tanzania. *The Journal of Human Resources,* 35 (1), 177-203.

Boonstra, A. (2010). Identifying and Managing Stakeholders in Enterprise Information System Projects. In M.M. Cruz-Cunha (Ed), *Social, Managerial, and Organizational Dimensions of Enterprise Information Systems* (pp. 313-328). Pennsylvania: Business Science Reference.

Brown, R. B., & Saunders, M. (2008). *Dealing with statistics: what you need to know.* Berkshire: Open University Press.

Bwalya, K. J. (2009). Factors Affecting Adoption of E-Government in Zambia. *Electronic Journal of Information Systems in Developing Countries*, 38 (4), 1-13.

Cadle, J., & Yeates, D. (2008). *Project management for Information Systems* (5th ed). Essex: Pearson Education Limited.

Carol, J., M, & Swatman, P. A. (2000). Structured-case: A methodological framework for building theory in information systems research. *European Journal of Information Systems*, 9 (4), 235-242.

Cap Gemini. (2004). Online availability of Public Services: How Europe Progressing? Web based Survey on electronic Public Services, Report of the Fifth Measurement. European Commission.

Carter, L., & Belanger, F. (2005). Citizen Adoption of Electronic Government Initiatives. *Paper presented at the 37th Hawaii International Conference on System Sciences*. Hawaii.

Carter, L., & Weerakkody, V. (2008). E-Government adoption: A cultural comparison. *Journal of Information Systems Frontiers*, 10 (4), 473-382.

Charmaz, K. (2006). *Constructing Grounded Theory: A practical Guide through Qualitative Analysis*. London: SAGE.

Chau, P. Y. K, & Hu., P. J. (2002). Examining a Model of Information Technology Acceptance by Individual Professionals: and Exploratory Study. *Journal of Management Information systems*, 18 (4), 191-122.

Chen, Y. N, Chen, H. M. Huang, W., & Ching, R. K. H. (2006). E-Government Strategies in Developed and Developing countries: An Implementation Framework and Case Study. *Global Information Management,* 14 (1), 23-46.

Chircu, A.M., & Hae-Dong Lee, D. (2003). Understanding IT vestments in the public sector: The case of e-Government. *Paper presented at the 9th Americas Conference on Information Systems,* 792-800. Florida.

Choudrie, J., & Dwivedi, Y. (2005). *A survey of Citizens' awareness and Adoption of A-government Initiatives, The Government Gateway: A united Kingdom Perspective*. Paper presented at the eGovernment Workshop, Brunel University, Brunel.

Christensen, L. T., & Askegaard, S. (2001). Corporate identity and corporate image revisited. A semiotic perspective. *European Journal of Marketing,* 35 (3/4), 292-315.

Clayton, M. J. (1997). Delphi: a technique to harness expert opinion for critical decision-making tasks in education. *Journal of Educational Psychology*, 17 (4), 373-386.

Colesca, E. S., & Liliana, L. (2009). E-Government Adoption Romania. *International Journal of Business, Economics, Finance and Management Sciences,* 1 (2), 121-125.

Cooper, D. R., & Schindler, P. S. (2001). *Business Research Methods* (8th ed). New York: McGraw-Hill/Irwin.

Cordella, A. (2007). E-government: towards the e-bureaucratic form? *Journal of Information Technology*, 22 (3), 265-274.

COSTECH. (2005). About COSTEH. Retrieved, November 20, 2009, from: http://www.costech.or.tz/index.php/services

Crossan, F. (2003). Research Philosophy: towards an understanding. *Nurse Researcher*, 11 (1), 46-55.

Cullen, R., & Hernon, P. (2004). Wired for Well-Being: Citizens' Response to e-Government. *A report presented to the E-Government Unit, State Services Commission.* Retrieved November 10th, 2008, From: http://www.e.govt.nz/resources/research/vuw-report-200406.

Dada, D. (2006). The Failure of E-Government in Developing Countries. *Electronic Journal of Information Systems in Developing Countries*, 26 (7), 1-10.

Damodaran, L., Nicholls, J., Henney, A., Land, F, & Farbey, B. (2005). The Contribution of Sociotechnical Systems Thinking to the Effective Adoption of e-Government and the Enhancement of Democracy. *Electronic Journal of e-Government,* 3 (1), 1-12.

Davis, D. F. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 3 (3), 319-340.

Davis, F. D, Bagozi, R. P, & Warshaw, P. R. (1989). User acceptance of Computer Technology: a Comparison of Two Theoretical Models. *Management Science*, 35 (8), 982-1003.

DAWASCO, (2007). Who are we. Accessed March 28th, 2009, from; http://www.dawasco.com/about_dawasco.htm.

Dawes, S. S., Pardo, T. A., & Creswell, A.M. (2004). Designing government information access programs: A holistic approach. *Government Information Quarterly*, 21 (1), 3-23.

Dimitrova, D. V., & Chen, Y. (2006). Profiling the Adopters of E-Government Information Services: The influence of Psychological Characteristics, Civic Mindedness, and Information Channels. *Social Science Computer Review*, 24 (2), 172-188.

Dragulanescu, N. (2002). Website Quality Evaluations: Criteria and Tools. *The International Information & Library Review*, 34 (3), 247-254.

Ebrahim, Z., & Irani, Z. (2005). E-Government Adoption: architecture and barriers. *Business process Management Journal*, 11 (5), 589 -611.

Esteves, J, & Joseph, R. (2008), A framework for assessment of eGovernment projects. *Government Information Quarterly,* 25 (1), 118-132.

French, M. (1990). Research in engineering design: Some proposals for improving research, teaching and practice. *Journal of Engineering and Technology Management*, 7 (2), 145-151.

Fjeldstad, O. (2003). Fighting Fiscal Corruption: Lessons from the Tanzania Revenue Authority. *Public Administration and Development,* 23 (2), 165–175.

Fjeldstad, O., Katera, L., & Ngalewa, E. (2008). Outsourcing Revenue Collection: Experiences from Local Government Authorities in Tanzania. *REPOA Brief,* Brief 10. Retrieved November 6th, 2008 from; http://www.cmi.no/publications/file/?3011=outsourcing-revenue-collection.

Fuchs, C., & Horak, E. (2008). Africa and the digital divide. *Telematics and Informatics*, 25 (2), 99-116.

Garcia, A. C. B., Maciel, C., & Pinto, F. B. (2003). A Quality Inspection Method to Evaluate E-Government Sites. M.A. Wimmer et al. (Eds.): *Lecture Notes in Computer Science: Electronic Government* (pp. 198–209), 3591. Heidelberg: Springer Berlin.

Germanakos, P., Samaras, G., & Christodoulou, E. (2005). Multi-channel Delivery of Services - the Road from eGovernment to mGovernment: Further Technological Challenges and Implications. *Proceedings of the first European Conference on Mobile Government (Euro mGov 2005)*, Brighton, 210-220.

Gilbert, D., Balestrine, P., & Littleboy, D. (2004). Barriers and Benefits in the adoption of e-Government. *International Journal of Public Sector Management*, 17 (4), 286-301.

Gill, J., Johnsons, P. (2002). *Research Methods for Managers* (3rd ed). London: Sage Publications.

Gil-Garcia, J. R, & Luna-Reyes, L. F. (2006). Enacting inter-organizational e-government in the Mexican federal government. *Proceedings of the international conference on Digital government research.* California, 394-395.

Gil-Garcia, J. R, & Pardo, T. A. (2005). E-Government success factors: Mapping practical tools to theoretical foundations. *Government Information Quarterly,* 22 (2), 187-216.

Gray, E. R., & Balmer, J. M. T. (1998). Managing corporate Image and Corporate Reputation. *Long Range Planning,* 31(5), 695-702.

Gupta B., Dasgupta, S., & Gupta, A. (2008). Adoption of ICT in a government organization in a developing country: An empirical study. *The Journal of Strategic Information Systems*, 17, (2), 140-154.

Hall, B.H., & Khan, B. (2003). Adoption of New Technology. Institute of Business and Economic Research. UCB, California: Berkeley.

Hanna. K. N, Qiang, C. Z., Kimura, K., & Kuek, S.C. (2009). National E-Government .

Heeks, R. (2006). *Implementing and managing eGovernment: An international Text.* London: Sage Publications.

Heeks, R. (2005). e-Government as a Carrier of context. *Journal of Public Policy*, 25 (1), 51-74.

Hernandez, B., Jimenez, J., & Martin, M. J. (2009). Adoption vs acceptance of e-commerce: two different decisions. *European Journal of Marketing,* 43 (9/10), 1232-1245.

Hevner, A. R. (2007). A three Cycle view of Design Science Research. *Scandinavian Journal of Information Systems*, 19 (2), 87-92.

Hinnant, C. C., Welch, & E. W. (2003). Managerial capacity and digital government in the states: Examining the link between self-efficacy and perceived impacts of IT in public organizations. *Proceedings of the 35th Hawaii International Conference on System Sciences*. Hawaii: IEEE Computer Society, 137-145.

Ho, A. T., & Ni, A. (2004). Explaining the Adoption of E-Government Features: A case Study of Iowa Country Treasures' Offices. *American Review of Public Administration*, 34 (2) 164-180.

Holmes, D. (2007). Drop the "e": Marketing E-Government to Skeptical and Web-Weary Decision Makers. In M. Khosrow-Pour. (Ed). *Practising E-Government: a Global Perspective.* Pennsylvania: Idea Group Publishing.

Holmes, D. (2002). Marketing e-Government to a skeptical public. *CIO Government Review*, Retrieved November 25th, 2008, from: http://www.itworldcanada.com/a/CIO-Gov.-Review/d118b39c-29b1-49b3-a98c-656626ce4946.html.

Hoyle, D. (1994). *ISO 9000 quality systems handbook* (4th ed). MA: Butterworth-Heinemann.

IDA. (2004). Multi-Channel delivery of eGovernment Services. European Commission. Retrieved November 22nd, 2006, from: www.cisco.com/global/DE/pdfs/publicsector/ida_07_04.pdf

InfoDev. (2002). The E-Government Handbook for Developing Countries: A project for InfoDev and The center for Democracy and Technology. Retrieved October 2nd, 2005 from http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan007462.pdf

ITU. (2009). Information Society Statistical Profiles 2009: Africa. ITU

Jaeger, P. (2003). The Endless Wire: E-Government as global phenomenon. *Government, Information Quarterly*, 20 (2), 323–331.

Jamieson, S. (2004). Likert scales: how to (ab) use them. *Medical Education*, 38 (12), 1217-1218.

Jeyaraj, A., Rottman, J. W., & Lacity, M. C. (2006). A review of the predictors, linkages, and biases and IT innovation adoption research. *Journal of Information Technology*, 21 (1), 1–23.

Kaaya, J. (2004). Implementing e-Government Services in East Africa: Assessing Status through Content Analysis of government websites. *Electronic Journal of E-Government,* 2 (1), 39-54.

Kachale, E. C. (2008). Accessibility of ICT to speakers of indigenous African languages. OPENSPACE, 2 (3), 88-94.

Kalu, K. N. (2007). Capacity Building and IT Diffusion: A Comparative Assessment of E-Government Environment in Africa. *Social Science Computer Review*, 25 (3), 358–371.

Kamal, M. M. (2006). IT innovation adoption in the government sector: identifying the critical success factors. *Journal of Enterprise Information Management,* 19 (2), 192-222.

Kamat, V. (2008).This is not Our Culture! Discourse of Nostalgia and Narratives of Health Concerns in Post-Socialist Tanzania. *The Journal of the International African Institute,* 78 (3), 359-383.

Karahanna, E., Straub, D. W, & Chervany, N. L. (1999). Information Technology Adoption Across Time: A Cross-Sectional Comparison of Pre-Adoption and Post-Adoption Beliefs. *MIS Quarterly*, 23 (2), 183-213.

Ke, W., & Wei, K.K. (2004). Understanding of e-Government development: A case study of Singapore e-Government. *Proceedings of the Tenth Americas Conference on Information Systems*, 617-625.

Keen, P. G. W., & Sol, H. G. (2008). *Decision Enhancement Services Rehearsing the Future for Decisions That Matter*. Amsterdam: IOS Press.

Kijsanoyotin, B., Pannarunothai, S., & Speedie, S. M. (2009). Factors influencing health information technology adoption in Thailand's community health centres: Applying UTAUT model. *International Journal of Medical Informatics,* 78 (6), 404-416.

Kitillya, H. (2006). Aspects of administrative reforms TRA experience, by commissioner general. Presentation at the Jointly Organized by the World Bank Institute - Issues in Revenue Administration and Combating Corruption, CapeTown, South Africa. Retrieved 20th August, 2007, from http://www1.worldbank.org/publicsector/pe/tax/Capetown06/Tanzania.ppt.

Knapp, T. R. (1990).Treating ordinal scales as interval scales: an attempt to resolve the controversy. *Western Journal of Nursing Research*, 39 (2), 121-123.

Kobb, D. (2008). *E-government and PSRP Phase II*, POPSM, Dar es Salaam, Tanzania.

Kolsaker, A., & Lee-Kelley, L. (2006). Citizen-centric e-government: a critique of the UK Model. *International Journal of Electronic Government,* 3 (2), 127 – 138.

Kortemann, M. (2005).Cultural Background and Technology Acceptance: Evaluation of ICT projects that bridge the digital divide. Retrieved October 12th, 2006, from: http://staff.science.uva.nl/~evers/afstudeerscripties/kortemann.pdf.

Kovačić, Z. J. (2005). The Impact of National Culture on Worldwide eGovernment Readiness. *Informing Science Journal*, 8, 143-158.

Kumar, V., Murkerji, B., Butt, I., Persaud, A. (2007). Factors for Successful e-Government adoption: a conceptual Framework, *The Electronic Journal of E-Government*, 5 (1), 63 - 76.

Kunstelj, M., Jukić, T., Vintar, M. (2007). Analysing the Demand Side of E-Government: What Can We Learn From Slovenian Users? *Lecture Notes in Computer Science*: *Electronic Government* (pp. 305 - 317), 3591. Heidelberg: Springer Berlin.

Kushchu, I., & Kuscu, M. H. (2004). From E-government to M-government: Facing the Inevitable, *Mobile Government Lab.* Retrieved on March 30th 2007, from: http://www.mgovernment.org/resurces/mgovlab_ikhk.pdf.

Laere, J. V. (2003). *Coordinating Distributed Work: Exploring situated coordination with gaming-simulation*. PhD Thesis, Delft University of Technology, Delft, The Netherlands.

Lallana, E. C. (2008). *e-Government Interoperability*. Bangkok: UNDP. Retrieved 13th November 2009, from http://www.apdip.net/projects/gif/gifeprimer

Lam, W. (2005). Barriers to e-Government integration. *Journal of Enterprise Information Management*, 18 (5), 511-30.

Layne, K., & Lee, J. (2001). Developing Fully Functional E-Government: A four stage model. *Government Information Quarterly*, 18(2), 122-136.

Lancaster, C. (2001). Developing countries: Winners or Losers? Retrieved February 15th, 2007, from www.ndu.edu/inss/books/Books_2001/Global%20Century%20-%20June%202001/C30Lanca.pdf.

Lancaster, G. (2005). *Research Methods in Management: a concise introduction to research in management and business consultancy*. Massachusetts: Elsevier-Butterworth.

Lenk, K., & Traunmüller, R. (2000). A Framework for Electronic Government. *Proceedings of International Conference on Database and Expert Systems Applications*, 340-345.

Li, J. P, & Kishore, R. (2006). How robust is the UTAUT instrument?: a multigrain invariance analysis in the context of acceptance and use of online community weblog systems. *Proceedings of the 2006 ACM SIGMIS CPR conference on computer personnel research: Forty four years of computer personnel research: achievements, challenges & the future*, Claremont, California, USA, 183-198.

Liu, B. F. (2006). Preparing the people: An Assessment of state Emergency Management Websites. Student Paper Competition, Natural Hazards Centre, University of North Carolina, North Carolina.

Löfstedt, U. (2005). E-Government – Assessment of Current Research and Some Proposal for Future Directions. *International Journal of Public Information Systems*, 1, 39-52.

March, S. T, & Smith, G. F. (1995). Design and natural science research on information technology. *Decision Support Systems,* 15 (4), 251-266.

Margetts, H. (2006). E-Government in Britain—A Decade On. *Parliamentary Affairs*, 59 (2), 250–265.

Mascarenhas, O., & Maghimbi, M. (2005). Sengerema Multi-Purpose Community Telecentre: Final Evaluation Report, Retrieved June 10th , 2009, from; https://idl-bnc.idrc.ca/dspace/handle/123456789/30684.

Maumbe, B. M, Owei, V., & Alexander, H. (2008).Questioning the pace and pathway of e-government development in Africa: A case study of South Africa's Cape Gateway project. *Government Information Quarterly,* 25 (4), 757–777.

Mgaya, K. (n.d). Development of Information Technology in Tanzania. Retrieved September, 19th, 2008, from: http://www.tanzaniagateway.org/docs/development_of_information_techno_in_tanzania.pdf on: 19th September, 2008.

Mgaya, R. B. S. (1999). Adoption and Diffusion of Group support Systems in Tanzania. PhD Thesis, Delft university of Technology, The Netherlands.

Millard, J. (2003). ePublic Services in Europe: past, present and future. Danish Technological Institute, Retrieved November 20th, 2008, from: ftp://ftp.cordis.europa.eu/pub/ist/docs/epublic-services.pdf.

Millar, A. (2007). Tanzania MoU envisioning Study; finding and recommendations, Microsoft/UTR.

Mofleh, S. M., & Wanous, M. (2008). Understanding Factors Influencing Citizens' Adoption of e-Government Services in the Developing World: Jordan as a Case Study. Retrieved March 12th , 2009, from: www.dcc.ufla.br/infocomp/artigos/v7.2/art01.pdf.

Moon, M., & Norris, D. (2005). Does managerial orientation matter? The adoption of reinventing government and e-Government at the municipal level. *Information Systems Journal*, Vol. 15 (1), 43-60.

Morris, M. G., & Venkatesh, V. (2000). Age Differences in Technology Adoption Decisions: implications for a Changing work force. *Personnel Psychology*, 53 (2), 375-403.

Muganda-Ochara, N., & van Belle, J. (2008). Managing E-Government Adoption Process in Kenya's Local Authorities. *Communications of the IBIMA*, 1, 98-109.

Mulira, N. K. (2007). Implementing Inter-Organizational Service Systems: And Approach for emerging networks in volatile contexts. PhD Thesis, Delft University, The Netherlands.

Muniafu, S., M. (2007). *Developing ICT-Enabled Services in Transition Countries: a studio-based approach for logistics brokering*. PhD Thesis, Delft University, The Netherlands.

Mutagayhwa, B., Kinyeki, C., & Ulanga, J. (2007). *A Review of E-Government Related Interventions in PSRP Phase I And Advise on a Strategy Framework Towards PSRP Phase II*. United Republic of Tanzania.

NAO. (2002). Better Public service Through e-government: Academic Article in support of better Public Service through e-government. London: House of Commons.

NBS. (2009). *Quarterly Gross Domestic Product First Quarter 2009*. National Bureau of Statistics, Dar es Salaam, Tanzania

Ndou, V. (2004). E-Government for Developing Countries: Opportunities and challenges.*The Electronic Journal of Information Systems in Developing Countries*, 18 (1), 1-24.

Ngulube, P. (2007). The Nature and Accessibility of E-Government in Sub Saharan Africa. *International Review of Information Ethics*, 7, 1-13.

Nielsen, J. (1993). *Usability engineering*. California: Academic Press,

Norris, D. F. (2007). *Current Issues and trends in E-Government Research*. Pennsylvania: Cybertech Publishing.

Norris, D.F., & Moon, M. J. (2005). Advancing e-Government at the grassroots: Tortoise or hare? *Public Administration Review*, 65 (1), .64-75.

OECD. (2007). *OECD e-Government Studies: Turkey 2007*. Paris: OEDC Publishing France.

OECD. (2005). *E-Government for better government*. Paris: OEDC Publishing.

OECD. (2003).*The e-Government imperative*. Paris: OEDC Publishing.

Osborn, D., Z. (2004). African Languages and Information and Communication Technology (ICT): Key Elements for the Future. The 4Th Conference on Preserving African

Languages, University of Maryland. Retrieved 20th June, 2009, from: http://www.umes.edu/english/newalp/pdf/Conference/donald.pdf.

Owei, V., Maumbe, B., & van Rhyn, P. (2006). Unbundling E-Government Service Delivery in Developing Countries: Framework, Marketing Strategies and Lessons. Online *Proceedings of the European and Mediterranean Conference on Information Systems.* Retrieved June 10th, 2008, from*: http://www.iseing.org/emcis/EMCIS2006/_private/proceedings.htm*

Papadomichelaki, X., Magoutas, B., Halaris, C., Apostolou, D., & Mentzas, G. (2006). A Review of Quality Dimensions in e-Government Service. *Lecture Notes in Computer Science,* Heidelberg: Springer Berlin, 128-138.

Parasuraman, A., Berry, L.L. & Zeithaml, V.A. (1991), Refinement and reassessment of the SERVQUAL scale. *Journal of Retailing*, 67 (4), 420-50.

Peffers, K., Tuunanen, T., Marcus, A.R.,& Chatterjee, S. (2008). A Design Science Research Methodology for Information Research. *Management Information Systems*, 24 (3), 45-77.

Pilling, D., & Boeltzig, H. (2007). Moving Toward E-Government - Effective Strategies for Increasing Access and Use of the Internet among Non-Internet Users in the US and the UK. *Proceedings of the 8th Annual International Conference on Digital Government Research,* Philadelphia, Pennsylvania.

Ramesh, R., & Rao, H. R. (2005). Design Science and Information Systems, *Information Systems Frontiers*, 7 (3), 215.

Reddick, G. C. (2004). Empirical models of E-Government Growth in Local Governments, *E-Service Journal*, 3 (2), 59-84.

RGoZ. (2009). *Technical Notes for the Proposed Issues For MKUZA Review: Priority Category AAA, BBB and CCC.* Zanzibar, Tanzaia

RITA. (2009). Lengo na Usuli wa Historia. Retrieved April, 20th, 2009, from http://www.rita.go.tz/historyA.php

Rogers, E. M. (2003), *Diffusion of Innovations* (5th ed). Free Press, New York.

Rotchanakimnuai, S. (2008). Measuring e-Government service value with the E-GOVSQUAL-RISK Model. *Journal of Business Process Management*, 14 (5), 724-738.

Sabherwal, R., Jeyaraj, A., & Chowa, C. (2006). Information system success: Individual and organizational determinants. *Management Science*, 52 (12), 1849–1864.

Sarosa, S., & Sri Lestari, J. (2006). The Level of E-Government adoption: the Case of Jogjakarta's Local Governments. *Proceedings of iiWAS*, Yogyakarta Indonesia.

Saunders, M., Lewis, P., Thornhill, A. (2007). *Research Methods for Business Students*. (4th ed), Edinburgh: Pearson Education

Sawe, D. (2007). *Serikali Mtandao; madhumuni, matatizo, mafanikio, na changamoto,* POPSM.

Scholl, H.J. (2006). Is e-government research a flash in the pan or here for the long shot? in M. Wimmer, H.J. Scholl, A. Groenlund, & K.V. Anndersen, (Eds),*Electronic Government: Fifth International Conference*. Heidelberg: Springer.

Schuppan, T. (2008). E-Government in developing countries: Experiences from sub-Saharan Africa. *Government, Information Quarterly*, 26 (1), 118-127.

Schware, R., (Ed). (2005). *E-development: From Excitement to Effectiveness*, Washington DC: World Bank.

Schware, R., & Deane, A. (2003). Deploying e-government programs: the strategic importance of "I" before "E". *Info*, 5 (4), 10-19.

Seifert, W. J. (2003). A primer on E-Government: Sectors, Stages, Opportunities, and Challenges of Online Governance: Report for Congress, *The library of Congress* Retrieved October 12th, 2006, from http://www.fas.org/sgp/crs/RL31057.pdf.

Seifert, J. W., & McLoughlin, G. J. (2007). State eGovernment Strategies: Identifying Best Practices and Applications, CRS Report. Retrieved October 10th, 2008, from: http://www.fas.org/sgp/crs/secrecy/RL34104.pdf.

Shin, S., Song, H. & Kang, M. (2008). *Implementing E-Government in Developing Countries: Its Unique and Common Success Factors.* Paper presented at the annual meeting of the APSA 2008 Annual Meeting, Hynes Convention Center, Boston, Massachusetts.

Signore, O. (2005). A Comprehensive Model for Web Sites Quality. *Proceedings of the 2005 Seventh IEEE International Symposium on Web Site Evolution,* Budapest, Hungary.

Soanes, C., & Stevenson, A. (Eds). (2008). *Concise Oxford Dictionary*. Great Clarendon, Oxford: Oxford University.

Straus, A., Corbin, J. (1990). *Basics of Qualitative Research: Grounded theory Procedures and Techniques*. California: SAGE publications.

Tan, C. W., Benbasat, I., & Cenfetelli, R. T. (2008). Building Citizen Trust towards e-Government services: Do High Quality Websites Matter? *Proceedings of the 41st Hawaii International Conference on System Science*, IEEE.

TCRA. (2009).Telecommunications Statistics from 2000 to September 2009. January 20th, 2010, from:http://www.tcra.go.tz/publications/telecom.html.

Teoa, T.S.H., Lina, S., & Lai, K. (2009). Adopters and non-adopters of e-procurement in Singapore: An empirical study. *Omega*, 37 (5), 972-987.

The Economist. (2009). *E-readiness rankings 2009: the usage imperative*. The Economist Intelligence Unit. Retrieved, Novermber 10th, 2009, from: http://www.epractice.eu/en/library/292875

The Economist. (2008). *The electronic bureaucrat: a special reports on technology and government*. The Economist Intelligence unit.

The Working Group on E-Government in the Developing World. (2002). The Pacific Council on International Policy, Retrieved, December 20th, 2006 from http://unpan1.un.org/intradoc/groups/public/documents/apcity/unpan005030.pdf.

Thong, J. Y. L, & Yap, C. S. (1995). CEO Characteristics, Organization Characteristics and Infomration Technology Adoption in Small Business. *Omega-International Journal of Management Science,* 23 (4), 429-442.

Timmers, P. (2000). *E-Commerce: strategies and models for business-to-business trading*, West Sussex: John, Wiley & Sons.

Titah, R. & Barki, H. (2006). E-Government Adoption and Acceptance: A Literature Review. *International Journal of Electronic Government Research*, 2 (3), 23-57.

Thomas, C.J, & Streib, G. (2003). The new face of Government: Citizen-Initiated contacts in the Era of E-Government. *Journal of Public Administration and Theory*, 13 (1), 83-102.

TNBC. (2009). *Ten Pillars of KILIMO KWANZA: Implementation Framework.* Dar es Salaam, Tanzania

Trimi, S., & Sheng, H. (2008). Emerging Trends in m-government. *Communications of the ACM*, 51 (5), 53-58.

Trochim, W. M. K, James, P., & Donnelly, J.P. (2007). *Research Methods Knowledge Base*, Ohio: Thomson.

Tsakonas, G., & Papatheodorou, C. (2006). Analyzing and evaluating usefulness and usability in electronic information services. *Journal of Information Science*, 32 (5), 400-419.

Tseng, P.T.Y, Yen, D.C., Hung, Y., & Wang, N. C. F. (2008). To explore managerial issues and their implications on e-Government deployment in the public sector: Lessons from Taiwan's Bureau of Foreign Trade. *Government Information Quarterly*, 25 (4), 734–756.

Townsend, A.M. (2000). Life in the Real-Time City: Mobile Telephones and Urban Metabolism. *Journal of Urban Technology*, 7 (2), 85-104.

Tung, L. L., & Rieck, O. (2005). Adoption of electronic government services among business organizations in Singapore. *Journal of strategic information Systems*, 14 (4), 417-440.

UN. (2008). *E-Government Survey 2008: From E-Government to Connected Governance.* New York: United Nations.

UN. (2005). *Global E-government Readiness Report 2005: From E-Government to E-Inclusion.* New York: United Nations.

UN. (2004). *Global E-government Readiness Report 2004: Towards access for Opportunity*. New York: United Nations.

URT. (2009). *Tanzania in Figures, 2008,* National Bureau of Statistics. Dar Es Salaam, Tanzania.

URT. (2008). *Draft Tanzania e-Government Strategy.* President's Office – Public Service Management. Dar es Salaam, Tanzania

URT. (2007). *Information and Communication Technology (ICT) Policy for Basic Education, Ministry Of Education and Vocational Training (MoEVT).* URT, Dar es Salaam, Tanzania.

URT. (2006). *Tanzania Revenue Authority Act.* URT. Dar Es Salaam, Tanzania.

URT. (2005).*National Strategy for Growth and Reduction of Poverty, Vice president's Office*, Dar Es Salaam, Tanzania

URT. (2003). *National Information and Communications Technologies Policy.* URT, Dar Es Salaam, Tanzania.

URT. (1998). *Constitution of the United Republic of Tanzania.* Dar Es Salaam, Tanzania.

URT. (1986), *Tanzania Commission for Science and Technology.* URT, Dar es Salaam, Tanzania.

URT. (1973) National Examinations council of Tanzania Act. URT.

Vaishnavi, V., & Kuechler, W. (2008). Design Research in Information Systems, Retrieved November 19th, 2009, from: http://desrist.org/design-research-in-information-systems.

van Greusen, D., & Yeratziotis,A. (2008). e-Government: living up to the challenge of culture context. *Proceedings of the 2008 annual research conference of the South African Institute of Computer Scientists and Information Technologists on IT research in developing countries: riding the wave of technology,* 338, 246-256.

Venkatesh, V.; Morris, M. G.; Davis, G. B.; & Davis, F. D. (2003). User acceptance of information technology: Toward a unified view. *MIS Quarterly*, 27 (3), 425-478.

W3C. (1999). Web Content Accessibility Guidelines 1.0. W3C, Retrieved November 24th, 2008, from: http://www.w3.org/TR/WCAG10/wai-pageauth.pdf.

Walkenhorst, P. (2003). The SPS Process and developing Countries, International Conference on Agricultural Policy Reform and WTO: Where are we Heading? Retrieved February 15th, 2007, from http://www.ecostat.unical.it/2003agtradeconf/Contributed%20papers/Walkenhorst.pdf.

Wang, Y. (2007). A studio Based Approach for Business Engineering and Mobile Services. PhD Thesis, Delft University, The Netherlands.

Wang, H., Doong, H., & Lin, F. (2007). Determinants of E-Government Service Adoption: An Innovation Diffusion Perspective. *International Conference on Wireless Communications, Networking and Mobile Computing*, 3458-3461, IEEE.

Wangpipatwong, S., Chutimaskul, W., & Papasratorn, B. (2005). Factors Influencing the Adoption of Thai eGovernment Websites: information Quality and Systems Quality Approach. *Proceedings of the Fourth International Conference on eBusiness*, 19-20, Bankok, Thailand.

Warkentin, M., Gefen, D., Pavlou, P.A, & Rose G.M. (2002). Encouraging Citizen Adoption of e-Governent by building trust. *Electronic Markets*, 12 (3), 57-162.

Watson, R.T., & Mundy, B. (2001). A strategic Perspective of Electronic democracy. *Communications of ACM*, 44 (1), 27-30.

Webber, A. (2005). Making eGovernment Web Sites Usable, Forester, Accessed on 24th, November, 2008, From BNET.

Welman, J. C., & Kruger, S. J. (2001). *Research Methodology* (2nd ed). Cape Town: Oxford University Press.

West, D. M. (2004). E-Government and the Transformation of Service Delivery and Citizen Attitudes. *Public Administration Review*, 64 (1), 15-27.

WDM. (2008). Great Expectations: The saga of an African city, a UK company, the World Bank and a pop song. *World Development Movement*. Retrieved March 28th, 2009, from: www.wdm.org.uk/resources/briefings/water/greatexpectations25072008.pd.

World Bank. (2009). Country Classification. World Bank, Retrieved November 12th, 2009, from: http://web.worldbank.org/WBSITE/EXTERNAL/DATASTATISTICS/0,,contentMDK:20420458~menuPK:64133156~pagePK:64133150~piPK:64133175~theSitePK:239419,00.html.

World Bank. (2009). Tanzania: Country Brief. Retrieved February 20th, 2010, from: http://web.worldbank.org/WBSITE/EXTERNAL/COUNTRIES/AFRICAEXT/TANZANIAEXTN/0,,menuPK:287345~pagePK:141132~piPK:141107~theSitePK:258799,00.html.

Yang, K. (2003). Neointuitionalism and E-Government: beyond Jane Fountain, *Social Science Computer Review*, 21 (4), 432-442.

Yin, R. K. (2003). *Case study research: design and methods* (3rd ed). Thousand Oaks, CA: Sage.

Yonazi, J., Sol, H.G., & Boonstra, A. (2008). Developing a Framework for Assessing Adaptability of Citizen-Focused e-Government Initiatives in developing Countries: the Case of Tanzania; Exploratory Phase Results. *Proceedings of the 8th European Conference on e-Government*, Lausanne.

Zain, M., Rose, R.C., Abdullah, I., & Masrom, M. (2005). The relationship between information technology acceptance and organizational agility in Malaysia. *Information and Management*, 42 (6), 829-839.

Appendices

A: Initiation Phase Appendices

Appendix 1.A: Initial Exploratory Phase Coding

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
C1	Awareness of existing services	Need for awareness of existing services	Citizens Preparedness
C2	Awareness strategy		
C3	Awareness of e-Government		
C4	Being able to discriminate what you need		
C5	Citizens' Attitude towards the government		
C6	Curiosity (Knowing what is available)		
C7	Experience with e-Government		
C8	Getting to know e-Government		
C9	Sensitization		
C10	Way of influencing by social influence		
C11	Way of influencing usage		
C12	Way of influencing usage by sanctions		
C13	Way of influencing usage by training		
C14	Way of influencing usage by using other media		
C15	Attitude towards automation	Need for ICT Skills	
C16	Attitude towards ICT		
C17	Availability of IT skills in Government		
C18	Awareness of ICT		
C19	Being ill-informed about what computers can do		
C20	Computers as luxury		
C21	Concern on skilled of human capital		
C22	ICT Education issue		
C23	No hurry in government		
C24	Expectations on Using ICT		

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
C25	Fear on using computers		
C26	Image from the technology	Need for ICT Skills	
C27	Inadequate ICT Knowledge and Skills		
C28	Influence of foreign culture		
C29	Literacy		
C30	Fearing on technology/innovation		
C31	Culture concern	Preference for face to face	
C32	National culture		
C33	Oral tradition		
C34	Preferring/trusting the face to face communication		
C35	Resistance to change		
C36	Affordability	Affording to pay for	
C37	Economic power		
C38	Removing Tax on ICT equipment		
C39	User social type		
P1	Commitment from the top management	Administrative Buy-in	Perceived government preparedness
P2	Government Buy-in		
P3	Having organizational intent towards e-Government		
P4	Identification of automatable service		
P5	Intentional implementation of e-Government		
P6	Leadership and its influence		
P7	Need for mindset change		
P8	Being influenced to use by the government		
P9	Force people to use		
P10	Use by influence		

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
P11	Use by sanctions		
P12	Political will and commitment		
P13	Capacity building	Need for improving internal processes	
P14	Digital divide within the government		
P15	Inadequate planning		
P16	Information management problem		
P17	Demanding improved processes		
P18	Lack of equipment		
P19	Lack of management skills		
P20	Project management skills problem		
P21	Staff retention		
P22	E-Government strategy status	Need for Supportive policies	
P23	Lack of guidance framework		
P24	Lack of Strategy		
P25	Legal and regulatory framework need		
P26	National ICT policy weakness		
P27	Need for guiding standards		
P28	Need for integrating e-Government in other government programs		
P29	Perception on common agreement on e-Government		
P30	Policy/strategy		
P31	Coordination agency	Need for Coordination	
P32	Coordination problem		
P33	Coordination problem solution		
P34	Decision making body		
P35	E-Government Coordination		

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
P36	Administrative distribution	Need for government processes change	
P37	Business process change		
P38	Concern on how the government delivers its services		
P39	Concern on internal government structures		
P40	Concern on the lack of creativity and innovation		
P41	Consistency between e-service and physical service		
P42	Corruption		
P43	Culture of respecting procedures		
P44	Focusing on a specific clientele idea		
P45	Government's competition awareness		
P46	Government culture		
P47	Government preparedness for e-services		
P48	Ignoring user requirements		
P49	Inadequate publicity		
P50	Involving User during development		
P51	Lack of capturing local knowledge		
P52	Lack of records		
P53	Lack of research		
P54	Lack of transparency		
P55	Mode of implementation		
P56	Need for doing studies		
P57	Need for government business processes change		
P58	Preference for traditional working practices		
P59	Priority area		
P60	Transparency		

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
IN1	Availability of technology	Networks Access limitations	Inadequacy of access infrastructure
IN2	Blended System for access		
IN3	Category of e-Government media		
IN4	Channel characteristic		
IN5	Channel in geographical coverage		
IN6	Concern on the appropriateness of the access technology		
IN7	Concern on using the existing infrastructure		
IN8	Inadequate ICT related infrastructure		
IN9	Infrastructure		
IN10	Infrastructure - Soft		
IN11	Infrastructure characteristics		
IN12	Level of E-Government usage by category of media		
IN13	Limited access - No computers	Lack of computers	
IN14	Mode of access - (No computers)		
IN15	Place of accessing e-Government service		
IN16	Possibility of using low level technology		
S1	System downloading speed	Service Quality - Download speed	Perceived service Quality
S2	Ease of use	Need for ease of use services	
S3	Language problem		
S4	User friendliness		
S5	Trust concern	Need for trusted environment	
S6	Trust e-environment		
S7	Trust on e-Government processes		
S8	Trust on the e-Government		
S9	Trust on the system		

Code No.	Open code	Axial coding (Sub category)	Focused coding (Key Category)
S10	Privacy and Security concern		
S11	Privacy concern		
S12	Private sector involvement		
S13	External procedures	Concern on service reliability	
S14	Funding problem		
S15	Project continuity		
S16	Source of funding		
S17	System reliability		
S18	Response to citizens' concerns	Concern on response	
S19	Avoid government bureaucracy	Need for useful services (Service need fit)	
S20	Being influenced by circumstance		
S21	Being influenced by global dynamics		
S22	Economic activities		
S23	Convenience		
S24	Informational interest		
S25	Relevance of the service		
S26	Service-need fit		
S27	Social activities		
S28	Technology-normal life fit		
S29	Usage because of convenience		
S30	Value added service		
S31	Integrating discrete e-Government systems	Need for complete service	
U1	Collaboration concern between URT and ZNZ government	Concern on Union structure	Union Structure
U2	Union Structure Issue		

Appendix 1.AA: Initial Exploratory Phase Sample Quotes

category	Quote No.	Sample Quote	Source
Administrative buy in	QP1	Well, I think it is about the support of the leaders here. We were in Bagamoyo last week. We were discussing about ICT in the government. You can hear politicians saying 'websites are important', but they are not doing so. What they say and what they do thereafter is quite different. For example, it took me six months to increase the internet bandwidth here. During that delay I decided that we continue using the service, but I was taken to task to explain why I started using a service that was yet to be authorized by the management. So you can see what they say is contrary to what they do. …We also need an institution to support e-Government. You can see in Rwanda, for example, President Kagame is an ICT fanatic. He supervises ICT implementation. He is very close to the Rwanda Information Technology Agency (RITA)"	R.25
Need for coordination	QP2	Lack or coordination of e-government projects. As explained previously there are many uncoordinated ICT initiatives in the government. Would we have had a single body advising the government concerning ICT project, the government would have decided more soundly on prioritization and implementation of e-government initiatives. We need to have a mandated body that coordinated ICT projects in the country. Otherwise initiatives are disfranchised and people do not understand where to get what…	R.5
Adequacy of policies, guidelines and standards	QP3	The implication of that is that, the government has implemented these in its own traditional bureaucracy. …first the government should change itself, the processes, to reflect that it is a new way of governance. It should change. It should not use the old ways in this new approach. It should change its procedures and structural ways For example if you are to pay tax, now there are several steps before you actually pay. So if you should use the same procedure it means you should fill a form and it should be posted to some other officer. Those procedures can not work online. They should streamline these procedures that once it goes from the individual then it should go, if it should go to one desk and finished all there. If it goes to several desks as manual procedure, I do not think that should work. If this is supposed to meet some element of transparency, the government should change from all this type of classified information and whatever is there should be unclassified.	R.9
		The issue is that people in the government do not have legal bounds, and structures on handling e-government processes. So they will not implement those processes because nothing is legally binding them. The effect is that the citizens will not get the services they want.	R25
Adequacy of government practises, processes, and	QP4	…people look at how the government serve them. At the moment the government is in the same way it used to operate since them. Not much has been done to prepare the government to work digitally. People need to see this happening, otherwise they will say that the government have decides to disappear now…	R.14

category	Quote No.	Sample Quote	Source
procedure			
Need for coordination	QP5	There are two ways of looking at it. Zanzibar is semi-autonomous. As a government it has its own government structure. Mainly I am working on the Revolutionary government of Zanzibar e-government initiatives, but at the same time since we are part of the union, and we have union government, so whatever is planned for the union government, Zanzibar has part of it, which means that we have to be involved. In that level that is where I come in. As I told you I am not involved in every e-government project in Tanzania but in those areas that Zanzibar has its interest, I have been involved. Instead of taking a new bag and ask you a lot of questions he will have all your medical records in his computer and the story ends there	R.5
Awareness of e-Government	QC1	…Frankly speaking, I have not heard anybody speaking that we want to go e-Government. If there are people talking about that then it is in much closed circles in the government. But, if you go to the public and ask them is the government talking about e-governance, they will say, I do not know. So one could say the government, if it wants to embark on e-Government, it has not yet sensitized the public that the government intends to do that. And therefore, the common people are not aware if there is something called e-government. It is only those who know what e-Government is and what are the benefits.	R.14
Low computer skills	QC2	The real reason for that is that many people are afraid of using computers. They think that even when you touch a computer it becomes a problem. Even you may find somebody is well educated, but is afraid to use a computer. You find some body may be is a managing director, but can not use a computer, so he can not be able to access e-government information. He can just send a secretary; okay check the information for me. But is not the one who is using that information. So still we have a challenge on teaching the whole public on how to use a computer, just the basics, so that they can be able to even access the information that is for them. (R7)	R.7
Preference for face to face	QC3	…there is a cultural problem. People like to meet real persons to explain their problems. This is everywhere in Tanzania. I can imagine that it is so in the government. For example in the university, the procedures are clear, but one will like to meet a person to be satisfied that he has been served. If we have to adopt e-Government, this culture must change	R13
Affording to pay for	QC3	For example if you have the infrastructure, where you can just use your mobile model from TTCL, go all the way to Mpanda hook in and continue, that one will be different. But how many can afford to buy that gadget from 100000 Tanzanian shillings, and have a PC like that one from 1 mil to 5 mil TZS! They are few. And how many authorities, local authorities for example, can afford putting up a cyber cafe somewhere for the local people in their localities to access the internet for the local community itself?	R.10
Service quality	QS1	...it is about the availability of these services. You see, a lot of applications are missing. There is not strategic approach towards provision of the services. For instance, there are no useful applications such as land application services, what about things like title deed, reporting about theft? All you can find in the government website is information about ministers and other leaders in the ministries. Otherwise, there is no information that will be of use to the ordinary citizens. For example, what will an ordinary citizen search for from the website of my ministry? May be researchers may be using it.	R.41

category	Quote No.	Sample Quote	Source
	QS2	…on the case of websites, basically the friendless of the site is something that is very crucial. Moreover, not only the friendless even... for friendless I mean the issue of navigation, easy way of navigation, the issue of usability, the issue of currency is also crucial. Government websites are not designed well. Organization is poor and they are so much stuffed. I thing the design need to be improved to attract people.	R.12
	SFN1	It was observed that e-government service that will be employed by the URT will attract more people as compared to the one implemented by the RGZ. This is a very important political structure. People in both Tanzania mainland and Zanzibar so use the URT websites, while those implemented by RGZ are mainly attract the Zanzibaris During the exit interviews, all the Zanzibaris mentioned and were more aware of the URT websites as compared to RGZ websites. This can be explained from the fact that Zanzibaris have a dual feeling of being Zanzibaris while Mainlanders only have an option of being Tanzanian. A very good example is that the Zanzibaris can look for job opportunities and work in Tanzania mainland while few mainlanders do so.	
Adequacy of infrastructure	QIN1	…The problem is infrastructure. In PSRP2 the priority is to get services to the citizens quickly, and cheaply. But the problem is having a common infrastructure. May be our priority is on the common infrastructure and e-government strategy for e-government…. I also know that most of people do not have access to the internet. May be on the mobile now we have websites but still the access speed on the mobile is still low and even the devices are not good because the screen sizes are small, it is not comfortable to use a mobile phone to access the internet, especially for the old ages.	R.3
	QIN2	I think that we should be looking more, because the current mode of the current technologies that we have, which are in place, favour computer connected to the internet. I think that is very inappropriate for a developing country like Tanzania, and in the absence of information centres, information kiosk run by government and so forth, will actually mean that people are excluded from those services. So therefore we need to look at enhancing those public good public service aspects on the one side, and then on the other side with voluntary look at mobile technology as being the last gap. Look at enhancing mobiles as being a means of citizenry voluntarily contacting the government.	R9

Appendix 2.A : Experts Interview Guide

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Student: Jim Yonazi

Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Expert Interview Guide Date: – ……

Interviewee: ……..

Section A: Respondent information:

Question 1:

Please tell me about yourself including your position in your organization, and your current responsibilities

Probes: For how long have you been in that position?

What is your previous working experience in ICT?

Section B: Curent Situation

Question 2:

Would you please tell me, what does it mean by e-Government in Tanzania? (03:36)

Probes: Do you think this is a shared understanding amongst e-Government stakeholders in this country? If no, how do others perceiver it?

Question 3:

Who are the e-Government stakeholders in Tanzania?

Probe: Is there any prioritization amongst the stakeholders you have just mentioned? If yes, why? (It seems the question was not very clear, however, the interviewee gave some important information)

Question 4:

What are the currently available Government services in Tanzania that citizens can access electronically?

Probe: In a scale of 1 to 5 where 1 is very low and 5 is very high, where will you place the level of e-Government usage?

Question 5:

In your opinion, what might be the reasons for such a situation?

Question 6:

Please tell me what are the current strategies that the government is now doing to promote the usage of e-Governments services?

Section C: Factors influencing adoption

Question 7:

Now let us focus on Tanzanian citizens. Which qualities do you expect a Tanzanian citizen to have to be a regular user of e-Government services?

Probe: Are there instances where people with these qualities do not use the services? If yes, why?

Probe: Are there instances where people without these qualities do use the services? If yes, why?

Question8:

Now let us turn in to issues concerning the media used to access or deliver e-Government services. Please tell me which media are currently used to deliver government services electronically in Tanzania?

Question 9:

Lets us now talk about social and cultural issues in Tanzania. Are there any social-cultural issues that you think influence people's usage of e-Government services?

Question 10:

What are the specific strategies that you would recommend to promote adoption of e-Government services amongst the citizens?

Check question

Are there any other issues that we have not covered today that you think we could also talk about?

On behalf of my supervisors, I would like to thank you very much for your contributions you have made today. We will make sure that we make them available to you as soon as possible. Please feel free to contact us if you think there is any other thing that should have been considered. Please leave you doors open for more invitations and be ready for more invitations.

Thank you very much

Appendix 3.A: Access Point Interview Guide

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi

Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Internet Café-Exit-interview question guide

Interviewee:……..……..……..

Date: ……..……Place:……..……..

Section A
Introduction (for both the researcher and the interviewee)
Section B
Q.1 Are you a regular internet user? (***If Yes go to Q.2***. *If No go to Q.6*)
……
Q.2. Have you used any of the government website? (***If Yes go to Q.3***. *If No go to Q.7*)
……
Q.3. Will you consider yourself a regular user of government websites? (***If Yes go to Q.4***. *If No go to Q.7*)
……
Q.4 What do you normally look for when accessing government websites?
……
Q.5 What motivates you to obtain government service that through the websites?
……
Q.6 Do you think that many Tanzanians use the currently available government websites? (***If Yes probe***. *If No go to Q.7*)
Probe: How do you know that?
……
Q.7. What do you think might be a problem?
……
Q.8. In which other ways do you get service from the government?
……
Q.9. What will you suggest to be done to encourage more Tanzanians to use the government websites?
……

Appendix 4.A: Focus Group Guide

Enhancing citizen adoption of e-Government Initiatives in Tanzania

Researcher: Jim Yonazi, Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Focus group Guide

1. Number of group members: ……..
2. My group members prefer to get government services (Please tick):
   - ☐ In person (Face to face), ☐ Both ways
   - ☐ Electronically
3. Reasons for contacting the government in-person are:
   I. ……
4. Reasons for contacting the government electronically are:
   I. ……
5. Reasons for using both means are:
   I. ……
6. My group thinks that, in order for them to use government electronic services, the following issues are important:
   I. ……
7. My group thinks that, in order for the Tanzanian citizens to use government electronic services regularly, the following issues are important:
   I. ……
8. My group think that, Tanzanian citizens who use e-Government services regularly they do so because:
   I. ……
9. My group thinks that, the following issues needs to be considered when implementing e-Government services for Tanzanian citizens:
   I. ……
10. My group think that, Tanzanian citizens who do not use e-Government services they do not do so because:
    I. ……
11. Are there any other issues that we have not covered today that you thing we could also consider?

Appendix 5.A: Document Analysis Form

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Document Summary Form

Document type: Date received:
Site: Today's Date
Restrictions: Written by:
:

Contact Person:

1. Name and description of the Document:

2. Significance of the document:

i. 3. Summary of the contents:

4. Any other things

5. Issues to focus at in the next document analysis or document to search for:

Appendix 6.A: Observation Summary Form

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Event Observation Form

Event being observed:		Date received:	
Site/place:		Main theme:	
Restrictions:		Owner	
		:	
Contact Person:			
1. Description of the event:			
2. Key observations:			
3. Any other things			

Appendix 7.A: Website observation Summary Form

Enhancing citizen adoption of e-Government Initiatives in Tanzania

Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Dr. Albert Boonstra

Website Observation Form

Organization Name: :	
Type:	
URL:	
Services provided	
Mechanism of interactivity	
Level of interactivity	
Key observations	

Appendix 8.A: Interview/Focus Group Evaluation Form

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra

Interview/Focus Group Evaluation Form

Date:_____

Place:_____

Introduction:

This form is intended to seek your opinions concerning the discussion you have just participated. This will help us in refinement and fine-tuning of our research ideas, strategies, and instruments. Please feel free to communicate any other advice that you may feel important for our research. Please use the email provided above or other contact information at the bottom of this page to send us your comments.

We thank you in advance.

Please put an X to indicate your choice

S/N	Question	Very low	Low	Medium	High	Very high
1.	Please indicate how you would rate the level of clarity of the questions asked in the session					
2.	Please indicate the level of appropriateness of the questions asked to the topic being investigated					
3.	Please indicate your level of satisfaction with the way the meeting was managed					

4. Please tell us other things that you think need to be improved in future discussions:

5. Please tell us other issues that you think this research may needs to investigate:

Appendix 9.A: Axial Coding Memo Form

Enhancing citizen adoption of e-Government Initiatives in Tanzania

Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra

Contact type: Interview Written by
Contact Date ::
Contact Person: Interviewee: :
Site:

Phenomenon Adoption of e-Government

Causal conditions

Context

Intervening Conditions

Consequences

Appendix 10.A: Respondents Profiles

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra

Table 0-1: E-Government Experts

Organization	Number
Ministry	7
Agency	6
Academic	5
UN	1
Total	19

Table 0-2: ICT experts Focus Groups Respondents

Organization	Number
Ministry	2
Agency	7
Academic	1
NGO	1
Private	3
Total	14

Table 0-3: Exit interview Respondents

Region	Internet Café	Office
DSM	4	4
Morogoro	4	4
Zanzibar	4	4
Total	12	12

Table 0-4: Ordinary user respondents

Organization	Number
UDSM	17
IFM	9
CBE	4
SUA	6
ZNZ	7
Other	1
Total	44

Appendix 11.A: Government Website lists

S/N	Organization	Type	URL
1	Prime Minister's Office	Ministry	www.pmo.go.tz
2	Prime Minister's Office Regional Administration and Local Government	Ministry	www.pmoralg.go.tz
3	President's Office, Public Service Management Department	Ministry	www.estabs.go.tz
4	Ministry of Finance	Ministry	www.mof.go.tz/
5	Ministry of Agriculture, Food, and Cooperative	Ministry	www.agriculture.go.tz
6	Ministry of Health and Social Welfare	Ministry	www.moh.go.tz
7	Ministry of Infrastructure Development	Ministry	www.moct.go.tz
8	Ministry of Community Development, Gender and Children	Ministry	www.mcdgc.go.tz
9	Ministry of Natural Resources and Tourism	Ministry	www.tourismtanzania.go.tz
10	Ministry of Education and Vocational Training	Ministry	www.moe.go.tz
11	Ministry of Higher Education, Science and Technology	Ministry	www.msthe.go.tz
12	Ministry of Information, Culture and Sports	Ministry	www.hum.go.tz
13	Ministry of East African Cooperation	Ministry	www.meac.go.tz
14	Ministry of Home affairs	Ministry	www.moha.go.tz
15	Tanzania Parliament	Parliament	www.parliament.go.tz
16	National Electoral Commission	Electoral Commission	www.nec.go.tz
17	Bank of Tanzania	Agency	www.bot-tz.org
18	Tanzania Revenue Authority	Agency	www.tra.go.tz
19	Tanzania Communications Regulatory Authority	Agency	www.tcra.go.tz
20	Tanzania Investment Centre	Agency	www.tic.co.tz
21	Tanzania Bureau of Standards	Agency	www.tbs-tz.org
22	Tanzania Tourism Board	Agency	www.tanzaniatouristboard.com
23	Tanzania Social Action Fund	Agency	www.tasaf.org
24	National Social Security Fund	Agency	www.nssf.or.tz
25	Public Service Pension Fund	Agency	www.pspf-tz.org
26	Parastatal Pension Fund	Agency	www.ppftz.org
27	National Examinations Council	Agency	www.necta.go.tz/
28	Public Procurement Regulatory Authority	Agency	www.ppra.go.tz
29	Unit Trust of Tanzania	Agency	www.utt-tz.org/index1.php
30	Tanzania Meteorological Agency	Agency	http://www.meteo.go.tz/

B: Case study Appendices

Appendix 1.B: Coding Process

1. National Examinations Council of Tanzania - Coding Summary

Code No.	Open coding	Axial Coding	Focused Coding
N1	Affording to pay-for	Affording to pay-for	Citizens preparedness
N2	Awareness of the existence of the service	Awareness of the existing services	
N3	Interest on using ICT	Need for ICT knowledge	
N4	Need for ICT skills		
N5	Face-to-face preference	Preference for face-to-face	
N6	Infrastructure - Inadequacy	Access infrastructure limitations	Inadequacy of access Infrastructure
N7	Infrastructure - Optimisation of available technology	Lack of computers	
N8	Impact of external entities	Limit of responsibility	Limit of responsibility
N9	Nature of the organization	Nature of the organization	Nature of the organization
N10	Administrative buy-in	Buy in	Perceived organizational preparedness
N11	Lack of enforcing strategy		
N12	Need for Mindset change		
N13	Need for coordinating mechanism		
N14	Policy inadequacy	Need for supportive policies, procedures and processes	
N15	Practises, procedures, processes inadequacy		
N16	Internal status		
N17	Information incompleteness	Information characteristics	Perceived Service intrinsic issues
N18	Information complexity		
N19	Information out datedness		
N20	Information unreliability		
N21	Expert - Outdated information		
N22	Expert - Missing service		

National Examinations Council of Tanzania - Coding Summary (continued)

Code No	Open coding	Axial Coding	Focused Coding
N23	Usefulness	Information characteristics	Perceived Service intrinsic issues
N24	Poor Responsiveness	General service issues	
N25	Privacy concern		
N26	Website complexity	Website characteristics	
N27	Website design		
N28	Website reliability		
N29	Expert - Poor system design		
N30	Service - Fit in the union	Fit in the union	

2. Tanzania Revenue Authority - Coding Summary

Code No	Open coding	Axial Coding	Focused Coding
T1.	Affording to pay-for	Affording to pay-for	Citizens Preparedness
T2.	Infrastructure - Cost		
T3.	Awareness of the existence of the service	Awareness of existing services	
T4.	Interest on using ICT	Need for ICT knowledge and skills	
T5.	Need for ICT skills		
T6.	Face-to-face preference	Preference for face-to-face	
T7.	Infrastructure - Inadequacy	Infrastructure Inadequacy	Inadequacy of access Infrastructure
T8.	Infrastructure - Point of access		
T9.	Infrastructure - Optimisation of available technology	Lack of computers	
T10.	Preferred mode of obtaining services		
T11.	Impact of external entities	Impact of external Entities	Limit of responsibility
T12.	Nature/type of the organization	Nature of business	Nature of business
T13.	Citizen usage by sanctions	Buy in	Perceived Organizational Preparedness
T14.	Administrative buy-in		
T15.	Need for Mindset change		
T16.	Need for sanctioning		
T17.	Practises, procedures, processes inadequacy	Need for change in business practises and processed	
T18.	Policy inadequacy		
T19.	Coordinating Mechanism		
T20.	Service - Fit in the union	Union Service issue	Perceived Service intrinsic issues
T21.	Information Completeness	Information characteristics	
T22.	Information complexity		
T23.	information out-datedness		
T24.	information Reliability		

Tanzania Revenue Authority - Coding Summary (Continued)

Code No	Open coding	Axial Coding	Focused Coding
T25.	Expert - Missing service	Information characteristics	Perceived Service intrinsic issues
T26.	Source of Funding (Service Reliability)	Service issues	
T27.	Convenience		
T28.	Responsiveness		
T29.	Trust on technology used		
T30.	Usefulness		
T31.	Expert - Poor website design	Website characteristics	
T32.	Website complexity		
T33.	Poor website design		
T34.	Website reliability		

3. Ministry of Finance and Economic Affaires - Code Summary

Code No.	Open coding	Axial Coding	Focused Coding
M1.	Infrastructure - Access limitation	Access Limitation	Access infrastructure limitations
M2.	Affording to pay	Affording to pay-for	Citizens preparedness
M3.	Age	Age	
M4.	Awareness of what is available	Awareness of existing services	
M5.	Interest on ICT	Need for ICT knowledge	
M6.	Need for ICT skills		
M7.	Trust on the system (Technology)	Preference for face-to-face	
M8.	Preferring face-to-face		
M9.	Government Buy in	Buy in	Government preparedness
M10.	Need for sanctioning/incentivising		
M11.	Government Practise and policies	Need for supportive Practices and policies	
M12.	Limit of responsibility	Limit of responsibility	Limit of responsibility
M13.	Information reliability	Information characteristics	Perceived service intrinsic issues
M14.	Information Completeness		
M15.	Information Complexity		
M16.	Poor up-to-datedness		
M17.	Need for Usefulness		
M18.	Use for Convenience	Service issues	
M19.	Usefulness of the internet		
M20.	Poor Responsiveness to enquiries		
M21.	Poor website design	Website characteristics	
M22.	Website reliability		
M23.	Union factor	Union factor	

4. Stakeholders identification and coding

Case	Actor	Role	Involvement phase	Relative Importance	Degree of involvement	Object of involvement and related interests	Code
NECTA	Executive secretary	Initiator and the main decision maker, and owner	Identification, development, implementation, operation, and evaluation	Dominant	Involve, empower, consult, and inform	Business processes performance, project performance, quality of service	NS1
	Department of research	Initiator, manager and coordinator of projects	Identification, development, implementation, operation, and evaluation	Definitive & dependant	I Involve, empower, consult, and inform	Technical feasibility and performance	NS2
	Other departments	Collaboration	Development and implementation	Dormant	Involve, & collaborate	Functional performance	MS3
	Ministry of Education	Sponsor	Identification and funding	Dormant	Inform	Business processes performance, project performance, quality of service	NS4
	University of Dar Es Salaam	Partner	Announcement of examinations results	Discretionary	Facilitator	Technical performance	NS5
	TanEdu	Partner					
	Consultants	Expertise/developer	Development, Implementation, and maintenance	Dependent	Consult	Technical performance	NS6
	Students, teachers, Parents, Higher learning institutions, Researchers, Other	Users	Utilization	Dependent	Inform	Utility if the system	NS7
TRA	Ministry of Finance	Sponsor	Identification and funding	Dormant & demand	Inform	Business processes performance, project performance, quality of service	TR1
	PoPSM	Sponsor	Identification and funding	Dormant	Inform	Business processes performance, project performance, quality of service	TR2
	Commissioner General	Initiator and the main decision maker, and owner	Identification, development, implementation, operation, and evaluation	Dominant	Involve, empower, consult, and inform	Business processes performance, project performance, quality of service	TR3
	ICT Directorate	Initiator, manager and coordinator of projects	Identification, development, implementation, operation, and evaluation	Definitive & dependant	I Involve, empower, consult, and inform	Technical feasibility and performance	TR4
	Directorate of Taxpayers services and education	Collaboration	Development and implementation	Dormant	Involve, & collaborate	Functional performance	TR5
	Other Directorates	Collaboration	Development and implementation	Dormant	Involve, & collaborate	Functional performance	TR6
	Consultants	Expertise/developer	Development, Implementation, and maintenance	Dependent	Consult	Technical performance	

Case	Actor	Role	Involvement phase	Relative Importance	Degree of involvement	Object of involvement and related interests	Code
	Tanzania bureau of Standards, Drug Authority, Ministry of Health, and Other government institutions	Partners and users	Contribute and use information on TRA website	Discretionary	Facilitator	Technical performance	TR7
	Tax payers, Clearing and Forwarding agents, and others tax payers	Users	Utilization	Dependent	Inform	Utility if the system	TR8
MoFEA	Permanent Secretary	Initiator and the main decision maker, and owner	Identification, development, implementation, operation, and evaluation	Dominant	Involve, empower, consult, and inform	Business processes performance, project performance, quality of service	MS1
	Information and Communication Department	Collaboration	Development and implementation	Dormant	Involve, & collaborate	Functional performance	MS2
	Directorate of Computer	Initiator, manager and coordinator of projects	Identification, development, implementation, operation, and evaluation	Definitive & dependant	I Involve, empower, consult, and inform	Technical feasibility and performance	MS3
	Information department	Development and operation	Identification, development, implementation, operation, and evaluation	Definitive & dependant	Involve, empower, consult, and inform	Technical feasibility and performance	MS4
	Consultants	Expertise/developer	Development, Implementation, and maintenance	Dependent	Consult	Technical performance	MS5
	Pensioners and other entities	Users	Utilization	Dependent	Inform	Utility if the system	MS6

5. Validation Workshop - Code Summary

S/N	Open coding	Related Key category
W1	Inappropriate channel of delivery access to services	Access limitation
W2	Infrastructure inadequacy limiting access to service	
W3	Nature of the organization and its business	Organization nature
W4	Inadequate leadership commitment	Perceived organization preparedness
W5	Policy inadequacy constrain e-environment	
W6	Need for sanctioning/incentivizing	
W7	Unsupportive practices / behaviour	
W8	Incorrectness of information	Service Issues
W9	Difficult to use (Complex) service	
W10	Out-datedness of information	
W11	Poor website design	
W12	Service incompleteness	
W13	Union parity	
W14	Unreliability of services	
W15	Low value service - content	
W16	Age of the user matters	User preparedness
W17	Awareness of what is available	
W18	Government aware users	
W19	Low ICT skills and awareness limiting utilization	
W20	Not affording to pay-for the service	
W21	Preference for face to face communication	

Appendix 2.B: Sample Quotation List

1. NECTA
NECTA - Organizational Preparedness

Issue/factor	Quote No.	Sample Quote	Source
Lack of supportive policies	Qt1.	As I said these are new IT services, they are new services that we want NECTA to offer, and also the ICT policy is Not in place.	N16
	Qt2.	We can still say that organizational policies do not support that. There some areas in here where IT is totally not allowed. Just to let you know, the internet is in this building illegally. It was not supposed to be in this building. These are some of the limitations. The policy says that 'no internet interaction is allowed'	N.R17
Adherence to manual processing and lack of formalization of electronic communication	Qt3.	We do not use that internal mail, everything need to go through files. We do not trust the electronic form here… As I said before, we are a government institution, everything need to be in written form. We will reach to the electronic communication in the very far future	N.R17
	Qt4.	Most of the time I print all the emails I have received. After printing and indicating the officers to whom the emails should go, I also photocopy all the emails. This helps me not to have a lot of mails in my inbox because we delete them after printing. Now, because at that time I would have made some copies to take to the respective office, I make a follow up to establish if the enquiry have been addressed	N.R14
Utilization of website for only results related information	Qt5.	No. We have never done that [use the website for advertising]. I am do not know why do not do that. As for the adverts we just use other kinds of media. With time we may do that, but at the moment we just use the newspaper because we are not sure how many people may read our adverts from our website.	N.R15
Poor response	Qt6.	How can you expect them to respond through email? They will never do that. Even when they provide the services through their websites, people do not seem to be ready to use them because you will eventually need to go to their offices	N.R28

NECTA - Citizens Preparedness

Issue/factor	Quote No.	Sample Quote	Source
Affording to pay-for	Qt7.	The costs of accessing are high. Now because, most of the students do not work, they do not have money to spend on searching for exams result, however the parents do support. It would have been better if they had the computers to use at home, but they can not afford and the majority of the parents can not afford also	N.R1
	Qt8.	A general reason is money. I can not be spending my money for the sake of accessing the NECTA website. There should be a reason for me to do that. This is because the cost of connecting or accessing is high. I either go to an internet café or buy connection for my home. This is costly. The cost of accessing the internet in some areas ay go up to 2000/= per hour. How many people will manage to spend that amount to an internet café?	N.R5
Need for ICT skills	Qt9.	The majority of the Tanzanians are computer illiterate. This may be a very reason that even at form four level people can not use the electronic services to do whatever they want to do.	N.R4
	Qt10.	Yes the subject is in the syllabus, but it is not a mandatory subject, it is only for those who will opt for it. But the government is not very much serious about this subject, because if a student opts for that subject an additional cost of 50,000/= is required of top of 20,000/= normal government tuition fee. This is a hefty cost for most parents and their children. So you can imagine that the subject is for wealthy families and not for everyone	N.R30
Awareness	Qt11.	Awareness is another issue. Because the government do not advertise its services it is very difficult for people to know what is available	N.R4
Preference for face-to-face communication	Qt12.	We contact people at NECTA because we want more detailed information and clear doubts. The reason behind that is that we are more used to that means. But remember that exam results is something sensitive, so whenever you want to get things like certificates you will definitely have to visit NECTA. [I contact NECTA in person. This is because it is fast and it is easy to ask questions and get answers right away as compared to writing emails and waiting for answers for a long time.]	N.R3, [R7]
	Qt13.	I have internet connection in my office, but I use it for searching other information but not to communicate with the government. When it comes to that, I better go and see them. The internet is not my first choice	N.R27

NECTA - Service intrinsic Issues

Issue/factor	Quote No.	Sample Quote	Source
Information characteristics	Qt14.	I think NECTA is not yet ready. They may have an intention but they will still have to do a lot. The website is a good thing, but people would require more than just a website. They would like to register for exams online, they would like to pay online or settle with banks then NECTA get information and things like that	N.R5
Website characteristics	Qt15.	The design of the website is not attractive. You can not prepare the website to other local website such as CRDB or even CELTEL Tanzania websites. The website for NECTA seems like it is was developed in a rush	N.R17
	Qt16.	The most common complaint is that the website is very slow during the announcing of the results. That is why we decided to distribute the load by outsource the hosting of the website. As a result, we did not encounter that complaint in the past examination release. After the announcing of the results we distribute the results to the various education institutions. We publish the results in the UDSM, SUA, MoEVT. So at least there is a distribution of the load instead if allowing the whole country and the whole world to access the website from NECTA.	N.R17
General service issues	Qt17.	They do not know how to use computer and the internet, and also because of slowness in response of NECTA. If you send them an email they may mot respond at all. I think that NECTA need to change. They need to be using their emails and be responsive. They do not have a culture of responding quickly to even on letters.	N.R6
Fit in the union	Qt18.	I do not know whether the minister (Minister of education) has power to give order to Zanzibar schools but we believe whatever the minister says, the Zanzibar takes not on that,, so I am not saying it is an order, but it is how things go	N.R16

NECTA - Access limitations

Issue/factor	Quote No.	Sample Quote	Source
ICT Networks inadequacy	Qt19.	Another issue is infrastructure. The networks are not available everywhere and they are also not reliable. You may go in to an internet café and find that the network is down or very slow. That situation is even worse in the rural areas like in my home village… the cybercafés and internet in general is only available in towns and cities. In the rural areas these things are not there. So I thinks those people will be challenged in such ways	N.R5
	Qt20.	The problem is accessibility of the internet service, because here at our school we do not have such a service. So you need to go to town to visit an internet café, but the internet cafés are so few here in our town. So you may find that so many people are on the queue to access the internet so it is very difficult to access	N.R11
Availability of computers	Qt21.	We are thinking of SMS because SMS was also more accessible than internet itself. Because we came to realize that candidates have more access to SMS than the internet and it is easy to access our information through SMS than through the internet. The pilot system did well, the issue is now to make it available to people.	
	Qt22.	Another reason is that we do not have computers and we also do not have access to the internet. The computer I have here is not connected and is very old. So that makes us not to use the website…Students in towns do use, but not actually many. Because they do not have computers at home and that also do not have knowledge of using computers. Also the nature of Tanzania does not support many to use. For example, you may find that in a wide area of Tanzania do not have a reliable electricity and computer networks to allow such communications.	N.R6

TRA - Perceived organizational buy-in

Issue/factor	Quote No.	Sample Quote	Source
Buy-in	Qt23.	The issue here is that at TRA the main function is tax collection. Now when other issues come which are not directly going to bring about the increase of revenue, they are kept aside. For instance if today you come and say that by putting something online we are going to get 120 million or billion, it will be dealt with at one. But this one is looked at as unimportant thing. This is the problem	T.R7
Inadequacy of procedures	Qt24.	Their procedures are very much strange. I wonder how they can participate in electronic world with such an attitude. They are generally not ready. A document may pass through many procedures, and be handles by many people, and take a very long time while the same procedures could be done electronically and handled at one time. Now coming to the website issue, I think people, and of course I, we think that TRA is not ready to participate in the electronic world. This is strange. Additionally, it is just of recent days that they asked us of our email addresses. They even do not know our addresses, what about the other Tanzanians? You may write them an email but their response is very late if they respond at all	T.R1

TRA - Service intrinsic issues

Issue/factor	Quote No.	Sample Quote	Source
Information issues	Qt25.	The language used is English. Not may people are comfortable to using English because the majority of Tanzanians speak Swahili. It would have been more convenient to them if the website is developed in Swahili	T.R5
Website and information characteristics	Qt26.	Poor website design and poor contents. We think that the website is poorly designed and the contents are not of good quality. Most of the information is outdated. A good example is the issue of vacancies. There is no vacancies, but the information is still there	T.R4
Service issues	Qt27.	There is no response from the organization. When you send an email to TRA you do not expect to be replied. We wish to have an environment which we can get timely feedback from TRA. Currently it may take weeks or even months to get a response	T.R3
Line of responsibility	Qt28.	TRA's activities efficiency is related to other organizations, so even if TRA will try to provide its services online 24/7, the success will depend on the readiness of other stakeholders. For instance TRA works 24/7, but TPA doesn't. This still causes user taxpayer's dissatisfaction because they actually no not see TPA but TRA	T.R2
Nature of business	Qt29.	Probably based on the type of business we are in as the revenue authority, people will tend to prefer a manual way of doing things. A face-to-face… And I think it could be because of the nature of our business, or it could be because of the nature of the country itself. We probably prefer a face-to-face discussion.	T.R6
Union issue	Qt30.	In Zanzibar people may actually not be using it at all. One of the reasons is that for instance when you buy a registered car in Zanzibar and transport it to here (Tanzania mainland) you will still have to pay some more taxes. This is a very big discrepancy. Such problems may be discouraging many Zanzibaris and people trading between Zanzibar and here. So I think the website is being used more here than in Zanzibar because it may not save the purpose	T.R1

TRA – Citizens preparedness

Issue/factor	Quote No.	Sample Quote	Source
Citizens preparedness	Qt31.	But I think the majority of Tanzanians especially in the regions other than Dar es Salaam do not know how to use the website. You know this technology is still new in Tanzania. Not many people know how to apply it. Secondly I think the website is still unknown to most of the people. You can think about those people in the remote areas where there is no these modern ICT infrastructures. They do not know much about it. I also think that it is more convenient to go and visit a government office physically. Most people are still used to such means as compared to using means such as websites. But I know that the late response behaviour of TRA many discourage many people fro using any of their electronic means	T.R1

TRA - Access limitations

Issue/factor	Quote No.	Sample Quote	Source
Infrastructure inadequacy	Qt32.	The pain of the infrastructure is on the people who would like to provide the services rather than the citizens themselves. I would say we as a country we have not got the luxury of saying we have a high speed internet and things like that...So probably because the majorities have not had the luxury of getting the real speed which is required from the website, and the feeling is what they get is what they are supposed to get. So it is more less a pain to us because we need the infrastructure, we need to fight for the bandwidth in terms of the cost, in terms of availability, provision of these things in remote areas and things like that.	T.R6
	Qt33.	The main issue here is the connectivity to the internet. I have a computer in my office but most of the time the internet is down. So it is very difficult for me to be using. When the internet is available, it is very slow so it is actually frustrating. If I have to put the internet at home, it is still costly. I can not afford to do so.	T.R11
Lack of computers	Qt34.	If the accessibility of the services is difficult. Sometimes the website is down, but also most us need to go to cybercafés or in offices to get access. This makes most of us not to be able to access the services easily. We so not have computers at home, and it is expensive to access the internet from the cybercafé	

MoFEA

Issue/factor	Quote No.	Sample Quote	Source
Government preparedness	Qt35.	…but they gave [top leaders] directives recently during their meeting in Ngurdoto Arusha. They said that there should not be internet in the offices because information leaks because of that. So there should be internet cafés that if anyone wants to get access should go t the internet café and access. I think that is a kind of an awkward policy, and than is why it is not implemented	M.R9
	Qt36.	Frankly speaking, I think is the government bureaucracy. You may have a very good intention, well prepared, but you must get the authorization. That process has a lot of stages to go through. Bureaucracy is one of the reasons. Another reason is the level of the understanding of our leaders. The way the define security; they define it in a strange way. They do not believe that there can also be sufficient security over the internet. So it is bureaucracy plus knowledge.	M.R11
Citizens preparedness	Qt37.	I have never been given the email of MOFEA, but also when you contact the government to contact a specific person not the whole organization. So when I come here I want to meet a specific person so I must come… No I do not have any email for the MOFEA people. I do not know if they use the emails communicate with people outside MOFEA or for official issues. I think emails are just for normal communications	M.R1
Service issues	Qt38.	The government does not have the tendency of responding so they should improve that They should be sure of communicating reliable information (be sure of what they say) because for instance the EAC workers need to come here every time because the government say this and do another thing. The government needs s also to improve its processes. They do not respond because they rely on the old file system	M.R1
Information in issues	Qt39.	You may find that it overstays, it is not updated for a longer time, it has a lot of errors, language mix-up. You find that the title is in English and the content in Swahili. Such things are disappointing. You find the title is in Kiswahili, when you click you get the information in English or the opposite. This disappoints people a lot including me.	M.R9
Union factor	Qt40.	we are attracted to the ZNZ government because that is where we belong, but we still stand more chance in the union government	
Access limitations	Qt41.	Although it is very difficult to know, but we think that most of the people use from their offices because they do have access in their offices. This is a problem that we have in Tanzania that the internet is not available to most of the people. People find that spending 500 0r 1000/= in an internet café is a lot of money, so they decide to just use their offices facilities. This is applies to the working class people, but it may even be a problem to most of the ordinary people. They may not be using or website at all. This is a general problem to most of the Tanzanians.	M.R11

Appendix 3.B: Interview Guide for Case Management

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra

Date……..……..Time……..……
Interviewee: …….…… Organization…….……..……..

A. Respondent information:

1. Please tell me about yourself including your position in your organization, and your current responsibilities

B. Level of adoption

2. Please tell me, in average, how many times would an ordinary citizen consult your website?
3. In a scale of 1 to 5 where 1 is very low and 5 is very high, where you will place the level of e-Government usage of the website of your organization?
4. What measures or indicators do you use to determine the level of usage of your website?

C. Government preparedness

5. Please tell me what measures has your organization taken to prepare itself for offering its services to citizens through electronic means

   Probe: *Does the management of your organization emphasize on such initiatives?*
6. To what extent is the management of your organization supportive to the e-Government initiatives?
7. Who is the in-charge of e-Government initiatives in your organization?
8. Do the current business practises and procedures adequate for electronic service delivery?
9. Are there any policies or guidelines to guide the implementation/delivery of e-Government services?
10. What specific issues may be preventing your organization from delivering its services to citizens in full electronic manner?

D. Citizens' preparedness

11. How can you describe the current users of the website of your organization?
12. Do you think that the majority of the Tanzanian citizens are aware of the availability of your website and the advantages of using it?
13. How does the current level of the Tanzanian citizens' ICT skills relate to the degree of usage of the website of your organization?
14. What specific issues may be inhibiting citizens from using it?
15. How do you describe the willingness of the citizens to receive your services between electronic and in-person manner?

E. Service intrinsic issues

16. How do you evaluate the quality of your website?

    Probe: *Have you received complaints on the quality of the service you offer through your website?*

    Probe: *If yes, what were complaints about?*
17. To what extent is the quality of the information in your website encourages citizens to use it?
18. To which extent do you think that the service you offer through your website help citizens to solve their problems?
19. How does the quality of your website relate to the current degree of usage by the citizens?
20. Please describe the utilisation of your website in Tanzania mainland and in Zanzibar.

F. Inadequate ICT access infrastructure

21. How do the current users get access to your electronic services?
22. How do the current access infrastructure situation relate to the degree of citizens adoption of your services?

    Probe: *Is it possible access your electronic services through other channel other than computers?*

    Probe: *If you would be asked for recommendations on improving the adoption of your electronic services what will you recommend?*

G. Other

23. Are there any other issues that you think may be inhibiting citizens to use your website?

Appendix 4.B: Interview Guide for Case Users

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi; Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra
Interview Guide User -
Date……..……..Time……..……
Interviewee: …….…… Organization…….……..……..

A. Respondent information:

1. Please tell me about yourself including your position in your organization, and your current responsibilities

B. Adoption Level

2. How many times did you use this organization's website in the past year?
3. When you want to contact this organization, do you consider consulting its website first before visiting its offices? Why?

C. Perception on Government preparedness

4. Are you aware of this organization's website or any other electronic service?

   Probe: *If yes, please tell me how you came to know about it.*

   Probe: *If no, please tell me the reasons behind such a situation*

5. With respect to your experience with this organization, what is your opinion on the determination of this organization to deliver its services in electronic way?

   Probe: Do you think that this organization has done sufficient efforts to encourage you to use its website?

6. If this organization provides its services in fully electronic way, will you be willing to use the services? Why?

D. Citizens preparedness

7. Please tell me what specific factors may be challenging you from becoming a frequent user of this organization's website?

   Probe: *Do these factors apply to the majority of Tanzanian citizens as well? Please explain.*

8. Would you prefer to receive this organization's services through its website or in-person? Why?

   Probe: *Does this apply to the majority of the Tanzanian citizens? Why?*

E. Service intrinsic issues

9. What is your opinion on the general quality of the website of this organization?

   Probe: *Which specific quality aspects do you consider to be important?*

10. Please tell me how you perceive the quality of the information provided in this website
11. Please tell me why one would be attracted to use this organizations website
12. What specific issues do you think that need to be improved so that this website to attract more citizen users?
13. How can you explain the usage of this website in Tanzania mainland and Zanzibar?

F. Inadequate ICT access infrastructure

14. Please tell me how and where do you get access to use this website?
15. How do other Tanzanian citizens get access?
16. What specific challenges do you face when accessing this website?

    Probe: *Do these challenges relevant to the majority of Tanzanian citizens?*

G. Other:

17. If you would be asked to recommend some specific strategies to promote the usage of this organization's website, what would you recommend?

Appendix 5.B: Exit interview Guide for Case Users

Enhancing e-Government initiatives adoption in Tanzania
Researcher: Jim Yonazi
Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra
Interviewee:……

Date: :……Place:……

Section A
Introduction (for both the researcher and the interviewee)
Section B
Q.1 Please tell me what brought you to this office *(Hint: establishing the reason)*
……
……
……
……

Q.2. Why didn't you use information available on this organization's website to settle your problem? *(Hint: probe on the reasons of not using the website)*
……
……
……
……

Q.3. If this organization decides to provide its services through electronic means will you be ready to use them? *(Hint: probe why the respondent would or would not use)*
……
……
……
……

Q.4. What do you think are the issues inhibiting most of the Tanzanians from using this organization's website? *(Hint: probe on inhibiting factors)*
……
……
……
……

Q.5 What would you recommend to improve the utilization of this organization's website? *(Hint: Compare problems in Q4 and the suggested recommendations or required actions)*
……
……
……
……
Comments
……
……
……
……
Thank you very much

Appendix 6.B: FGD Guide for Case Management

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi

Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra

Date:..... Place.....

Section A

Number of group members: ……..
My group think that most of our target user prefer to obtain our services in the following manner (Please tick):
☐ *In person (Face-to-face)* ☐ *Electronically* ☐ *Both ways*
An average Tanzanian citizen would access our website …….times per year
We consider this frequency to be
☐ *Very low* ☐ *Low* ☐ *Average* ☐ *High* ☐ *very high*

Section B

The following issues inhibits my organization from offering its services in full electronic manner
……
E-Government projects in my organization face the following challenges:
……
……
The characteristics of the people using our electronic services are as follows:
……
The majority of the people who do not use our services they do not do so because:
……
In order for Tanzanian citizens to use our e-Government services regularly, the following issues are important:
……
Tanzanian citizens who use electronic service they do so because:
……
Our electronic services do not attract many people because:
……
The following reasons explain why our electronic services attract users:
……
……
The current infrastructural situation infrastructural situation influences the usage of our electronic services in the following way:
……
Other typical Tanzanian issues which may be inhibiting the citizens from using government electronic services are:
…..……

Appendix 7.B: FGD Guide for Case User

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Researcher: Jim Yonazi
Supervisors: Prof. Dr. Henk Sol and Prof. Dr. Albert Boonstra
Case Organization User Focus Group Guide -
Date……..Time……
Organization……

Section A

Number of group members: ……..
My group think that most of our target user prefer to obtain our services in the following manner (Please tick):
☐ *In person (Face-to-face)* ☐ *Electronically* ☐ *Both ways*
In average my group have accessed this organization's website …….times per year

Section A

Reasons for obtaining this organization's services through the above means are:
……
We will be ready to use this organizations website because:
……
We will be not ready to use this organizations website because:
……
The following are the typical characteristics of the users of the electronic services of this organization
……
My group thinks that, in order for Tanzanian citizens to use this organization's website regularly, the following issues are important:
……
My group thinks that, Tanzanian citizens who use this organization's website regularly they do so because:
……
What is the comparison of utilization of this website between Tanzania Mainland and Zanzibar?
Comparison:
……
Reasons:
……
My group thinks that, the following issues need to be considered when implementing government's electronic services for Tanzanian citizens:
……
My group think that, Tanzanian citizens who do not use e-Government services they do not do so because:
……
Please mention other issues that we have not covered today, but you think we could also consider?
……

Appendix 8.B: Documents Analysed

1. NECTA

S/N	Date	Media	Subject	On Web availability	Website Mentioning
1	8th April	Mtanzania	Exam registration for Form VI and Education Diploma	Nil	-
2	3rd, April	Mtanzania	Exam registration for Form VI and Education Diploma	Nil	1
3	3rd, April	Tanzania Daima	Exam registration for Form VI and Education Diploma	Nil	1
4	8th, April	Daily News	Exam registration for Form VI and Education Diploma	Nil	1
5	3rd, April	Daily News	Exam registration for Form VI and Education Diploma	Nil	1
6	30th, April	Daily News	Vacancies	Nil	1
7	18th, March	Tanzania Daima	CSEE and QT Registration	Nil	-
8	19th, March	Tanzania Daima	CSEE and QT Registration	Nil	-
9	18th, March	Mtanzania	CSEE and QT Registration	Nil	-
10	19th, March	Mtanzania	CSEE and QT Registration	Nil	-
11	10th, March	Daily News	Launch of Online Registration	Nil	-
12	6th, March	Tanzania Daima	Launch of Online Registration	Nil	-
13	7th, March	Tanzania Daima	Launch of Online Registration	Nil	-
14	18th, March	Mtanzania	Exam registration for Form VI and Education Diploma	Nil	-
15	19th, March	Mtanzania	Exam registration for Form VI and Education Diploma	Nil	-
16	18th, March	Tanzania Daima	Exam registration for Form VI and Education Diploma	Nil	-
17	19th, March	Tanzania Daima	Exam registration for Form VI and Education Diploma	Nil	-
18	19th, May	Mtanzania	Invitation for Prequalification	Nil	-
19	19th, May	Mtanzania	Invitation for Bids	Nil	-
20	17th, May	Mtanzania	Invitation for Bids	Nil	-
21	19th, May	Mtanzania	Procurement plan	Nil	-
22	17th, May	The Guardian	Procurement plan	Nil	-
23	2nd, May	Daily News	Vacancies	Nil	1
24	Undated1	Unknown	Procurement plan	Nil	-
25	Undated2	Unknown	Invitation for Bids	Nil	-
26	Undated3	Unknown	Invitation for Prequalification	Nil	-
26	Undated3	Unknown	Invitation for Prequalification	Nil	-

Other documents Analysed:

1. MoEVT, 2007, Basic Education Statistics in Tanzania (BEST) 2003-2007 national Data, URT
2. NECTA, 2007, Examinations Results Statistics: Exam Cycle February, 2007, NECTA, Tanzania
3. NECTA, 2008, Examinations Results Statistics: Exam Cycle October, 2007, NECTA, Tanzania
4. NECTA, 2008, Examinations Results Statistics: Exam Cycle May, 2008, NECTA, Tanzania
5. *The National examinations council of Tanzania Act 1973*, URT, Available at: http://www.parliament.go.tz/Polis/PAMS/Docs/21-1973.pdf [Accesses, 10th June, 2008]

2. TRA

1. *The Tanzania Revenue Authority Act* 1995, URT, Available at: [Accessed on 10th April, 2008]
2. TRA, 2005, Tanzania Revenue Authority ICT Strategy 2005, TRA
3. TRA, 2005, Tanzania Revenue Authority ICT Policy 2005
4. TRA, 2006, Information Systems Department: Annual Performance Report For July 2006 – June 2007, TRA
5. TRA, 2005, Addendum to the ICT Strategy: Cost Summary, TRA

3. MoFEA

1. Website Guidelines, (n.d), Ministry of Finance, URT
2. Organizational structure of the Ministry of Finance (Obtained from the Ministry of 11, Sept, 2008)
3. MoF, 2007, Budget Speech by the Minister for Finance Hon. Zakia Hamdani Meghji (MP), Introducing to The national Assembly the Estimates of the Government Revenue and Expenditure for Financial Year 2007/08 on 14th June, 2007
4. MoF, Budget Execution Report: Budget for Fiscal year 2007/08: April – June 2008 and Full year Performance, URT
5. MoFEA, 2008, Hotuba ya Waziri wa Fedha na Uchumi Mheshimiwa Mustafa Haidi Mkulo (MB.), Akiwasilisha Bungeni Mapendekezo ya Serikali Kuhusu Makadirio ya Mapato na Matumizi kwa Mwaka 2008/2009, Available at: http://www.tanzania.go.tz/budgetspeech/2008/Hotuba_ya_Bajeti_2008-09.pdf, [Accessed: 2nd, September, 2008]

Appendix 9.B: MoFEA Data

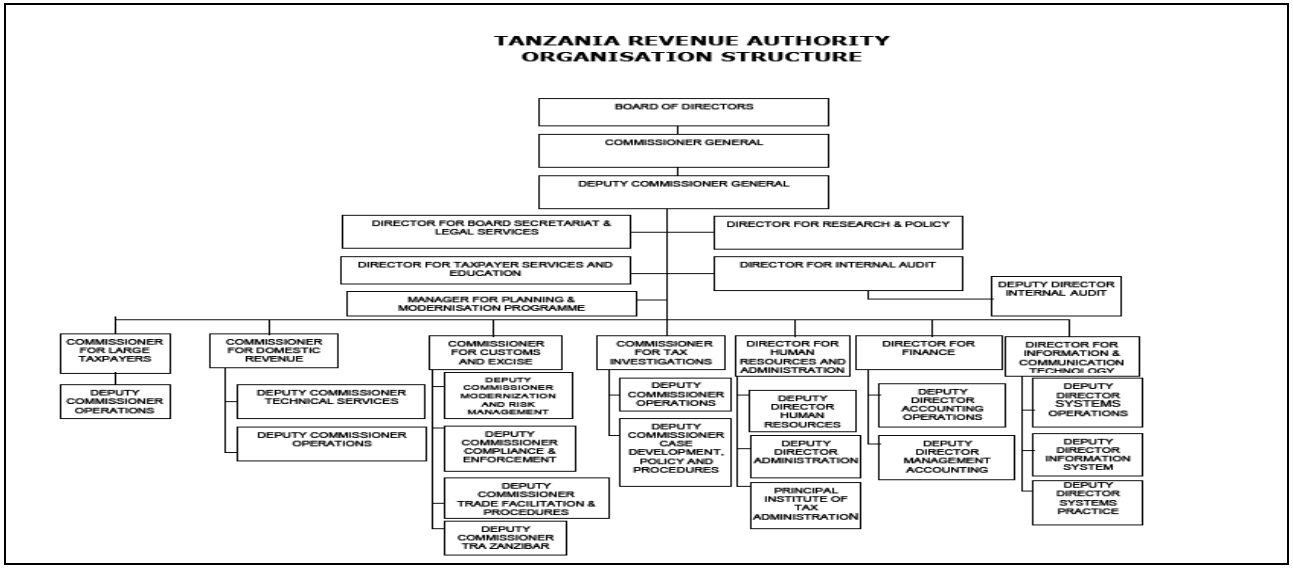
Discussion on website utilisation

S/N	Source	Observation	Reasons
1	Senior MoFEA official	Low utilisation	Duplication of information in other websites, less useful information
2	MoFEA Webmaster	Low utilization	Low value information and services
3	FGD 1	Low utilization	Only 3 visitors were online, know less about the website
4	FGD 2	Low utilization	Infrequent use
5	FGD 3	Low utilization	Infrequent use, not known
6	FGD 4	Low utilization	Infrequently visited the website
7	FGD 5	Low utilization	Never know about the website
8	FGD 6	Low utilization	Only used for scholarships and vacancies
9	FGD 7	Low utilization	Infrequent use, no useful information

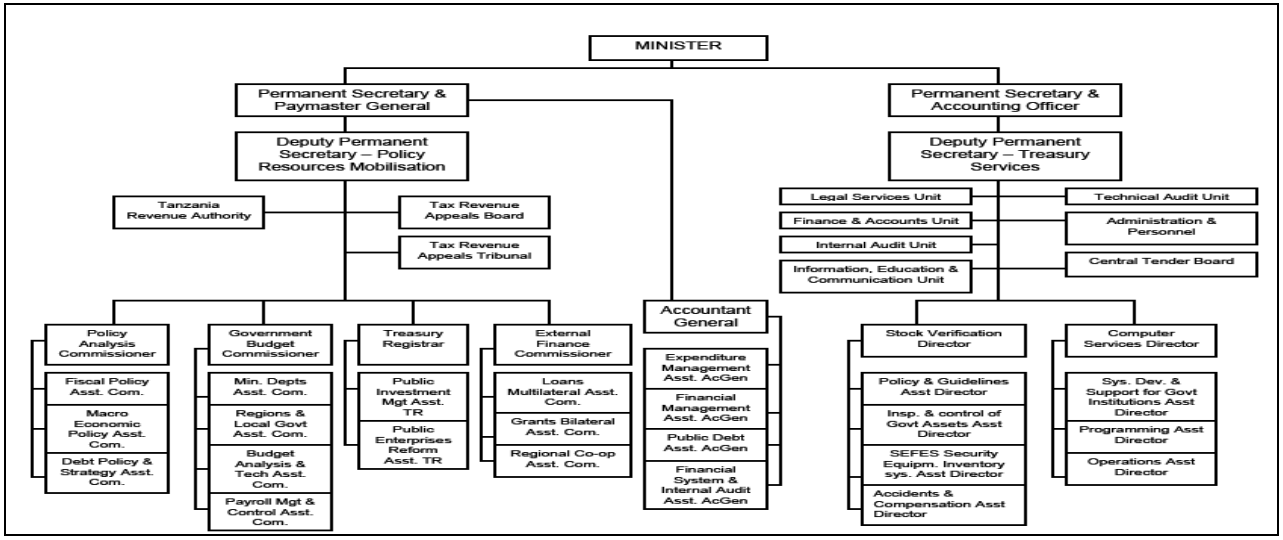
MoFEA Available systems

S/N	System	Scope
1	Integrated Human Resource Management System (IHRMS)	Inter ministerial
2	Integrated Financial Management System (IFMS)	Inter ministerial
3	LAWSON	Internal
4	Aid Management Platform	Inter ministerial & Donors
5	Strategic Budget Allocation System	Internal
6	Commonwealth Secretariat Dept Recording Management System	Shared with donors
7	Website (www.mor.go.tz	Public

Appendix 10.B: TRA Organization Structure



Appendix 11.B: MoFEA Organization Structure



Appendix 12.B: Guidelines Evaluation Questionnaire

Enhancing Citizen Adoption of e-Government Initiatives in Tanzania
Practitioner evaluation questionnaire
Researcher: Jim Yonazi
Email: J.J.Yonazi@rug.nl
Supervisors: Prof. dr. Henk Sol and Prof. dr. Albert Boonstra

Faculty of Economics and Business, University of Groningen, P.O. Box 800, 9700 AV Groningen, The Netherlands

Introduction

This questionnaire is intended obtain your evaluation concerning the proposed guidelines for enhancing e-Government initiatives in Tanzania. The guidelines were developed from research results of an ongoing study; *Enhancing adoption of E-Government Initiatives in Tanzania.* The guidelines are intended to will facilitate you in choosing, planning, designing, and deploying e-Government initiatives which are more likely to be adoptable by the Tanzanian citizens.

You have been selected to take part in this session because you have been involved in planning, managing, advocating, and/or supervising the implementation of ICTs in your organization. We are interested on your contributions because we believe that you can enlighten us on the relevance of the proposed guidelines.

Rules

Please feel free to provide us with your opinion. There is no right or wrong answers. Your responses will be analyzed and used to refine out initial thinking concerning the guidelines we are proposing. Should you wish to provide more information please feel free to contact us through the above contact information (J.J.Yonazi@rug.nl).

Structure

This questionnaire is divided into two three parts. The first part is eliciting your evaluation on how each proposition adequately address the intended adoption issue. The second part is intended to obtain your evaluation on the usefulness and usability of the guidelines in decision making.

Part 2: Guidelines

The aim of this section is to obtain your opinion on the appropriateness of our proposed checkpoint for the proposed guidelines. Please indicate your opinion by marking on the respective box. You may use (√) or (**X**)

Category	Subcategory	No.	Guideline	Checkpoints	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
Perceived Organizational preparedness	Organizational-wide buy in	1.	Develop a sustainable marketing strategy to brand and communicate e-Government initiatives to internal stakeholders	1.1. Establish internal champion					
				1.2. Conduct awareness and branding campaigning					
				1.3. Demonstrate of visible benefits/success					
				1.4. Develop coaching program					
				1.5. Ensure Internal stakeholders involvement					
				1.6. Provide incentives to encourage internal e-utilization					
	Adequacy of processing machinery	2.	Ensure that policies, practices, and processes support and formalize electronic communication	2.1. Review legal, regulatory, and process frameworks in favour of ICT					
				2.2. Promote internal ICT skills					
				2.3. Promote interdepartmental collaboration					
Citizens preparedness	Affording to pay-for	3.	Provide e-Government services through multi-channels	3.1. Exploit the potentials of widely locally available channels					
				3.2. Lower access transaction cost					
	Awareness of existing services	4.	Develop and implement a sustainable citizen-focused marketing strategy to brand and communicate e-Government externally	4.1. Deliver highly demanded services					
				4.2. Conduct awareness and branding campaigning					
				4.3. Demonstrate visible benefits/success					
				4.4. Involve stakeholders					
				4.5. Engage social intermediaries					
	ICT skills	5.	Ensure simplicity of contents and technologies used in delivering e-Government services	5.4. Observe ease of use					
				5.5. Identify and deliver services through locally widely available ICT channels					
				5.6. Ensure help is available					

Category	Subcategory	No.	Guideline	Checkpoints	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
	Preference for face-to-face	6.	Promote the ability to receive public services without having to interact with members of the service provider's staff f	6.1. Provide incentives to encourage electronic communication					
				6.2. Prioritize electronic communication					
				6.3. Increase options for electronically delivered services					
	Age	7.	Determine user profiles-service needs to facilitate services customisation	7.1. Identify specific potential users					
				7.2. Identify and deliver the highly demanded services					
				7.3. Deliver though multi-channels					
				7.4. Ensure ease of use					
Service issues	Information quality	8.	Ensure content quality meets citizen expectation	8.1. Use international guidelines for content development (e.g. W3C guidelines)					
				8.2. Define and adopt clear content and systems quality measures					
				8.3. Emphasize on services that can save time and money					
				8.4. Ensure completeness, easy-of-use, usefulness, and up-to-datedness					
				8.5. Adopt multi-lingual approach (Swahili and English)					
				8.6. Provide feedback mechanism					
				8.7. Conduct frequent content evaluation					
	Website quality	9.	Ensure website/system quality meets citizen expectations	9.1. Use international guidelines for system development (e.g. W3C guidelines)					
				9.2. Define clear content and systems quality measures					
				9.3. Provide system functionalities that add value (e.g. search-ability and multilingual)					
				9.4. Ensure User friendliness, easy-of-use					
				9.5. Ensure reliability and dependability					
	General service	10.	Refine responsiveness, usefulness,	10.1. Emphasize responsiveness to user enquiries					

Category	Subcategory	No.	Guideline	Checkpoints	Strongly agree	Agree	Neutral	Disagree	Strongly Disagree
	quality		and systems integration	10.2. Ensure service and system availability					
				10.3. Foster internal and external systems integration for service completeness					
Access issues	Adequacy of ICT networks and availability of access beguilement	11.	Adopt the multi-channel strategy for accessing e-Government services	11.1. Improve access ICT infrastructure					
				11.2. Adopt citizen-focused ICT multi-channelling approach					
				11.3. Exploit the potentials of the available infrastructure					
				11.4. Use intermediaries					
Limit of responsibilities	Limit of responsibilities	12.	Establish inter and intra organizational collaboration	12.1. Establish intra and inter organization collaboration mechanism					
Nature of the organization and business	Nature of the organization and business	13.	Determined the perceived organizational public image	13.1. Foster for a supportive perceived organizational public image					

Part 3: Additional information

Please feel free to provide us with any other information in the space provided below:

……

……

……

……

We thank you very much for your contributions you have made today. We will make sure that we make them available to you as soon as possible. Please feel free to contact us if you think there is any other thing that should have been considered.

Thank you very much

Appendix 13.B: Stakeholder Analysis

Case	Stakeholder	Involvement in Phase	Roles	Objects of involvement and related interests	Relative importance	Degree of involvement
NECTA	MoEVT	Budget approval	Sponsor	Scope of the system	Definitive	Inform
	NECTA management (executive Secretary)	Conceptualization, development, implementation, and operation	Owner & Initiator	Scope of the system, Business model, Functioning enterprise	Dominant and demanding	Involve
	Research and Evaluation department		Initiator and project manager	Scope of the system, Business model, Functioning enterprise, technology model physics, and component functioning		
	Examinations and other departments		Internal partners	Scope of the system, Business model, Functioning enterprise	Demanding	Collaborate
	UDSM & TanEdu	Utilization	External partner	Technology model physics, and component functioning	Discretionary	Collaborate
	Students, parents, teachers, schools		Intended users	Service availability	Adoption	Users
TRA	PoPSM	Budget approval, advocacy, and coordination	Sponsor	Scope of the system	Definitive	Inform
	MoF (Permanent Secretary)	Budget approval	Owner and Sponsor	Scope of the system, Business model, Functioning enterprise	Definitive	Inform
	TRA Management	Conceptualization, development, implementation, and operation	Owner and Decision maker	Scope of the system, Business model, Functioning enterprise	Dominant and demanding	Involve
	ICT department		Initiator and project manager	Scope of the system, Business model, Functioning enterprise, technology model physics, and component functioning		
	Taxpayer education Management		Internal partner	Scope of the system, Business model, Functioning enterprise		Collaborate
	Tanzania Bureau of Standards; MoHSW; Drug Authority; Chief Chemist, other Ministries	Implementation	External partner	Technology model physics, and component functioning	Discretionary	Collaborate
	Citizens and Clearing agents	Utilization	Users	Service availability	Discretionary utilization	Users
	Donors	Funding and evaluation	Sponsor	Scope of the system	Dominant and demanding	Inform
MoFEA	PoPSM	Budget approval, advocacy, and coordination	Sponsor	Scope of the system	Definitive	Inform
	Permanent secretary	Conceptualization, development,	Owner and Decision maker	Scope of the system, Business model, Functioning enterprise	Dominant and demanding	Involve

Case	Stakeholder	Involvement in Phase	Roles	Objects of involvement and related interests	Relative importance	Degree of involvement
		implementation, and operation				
	Information and Communication department	Conceptualization, development, implementation, and operation	Initiator and project manager	Scope of the system, Business model, Functioning enterprise, technology model physics, and component functioning	Dominant and demanding	
	Computer services department		Initiator and developer		Dominant and demanding	
	Other Ministries	Implementation	External partner	Technology model physics, and component functioning	Discretionary	Collaborate
	Citizen	Utilization	Users	Service availability	Discretionary utilization	Users

Part 2: Guidelines

The aim of this section is to obtain your evaluation on our proposed guidelines and their respective checkpoints. Specifically we intend to know how the guidelines were relevant facilitated you in your decision making today. Please indicate your opinion by marking on the respective box. You may use (**√**) or (**X**)

1. Usefulness

S/N	**Usefulness items**	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	Using the guidelines improves the quality of my work					
2	The guidelines enhances my understanding of the important e-Government adoption issues					
3	Using the guidelines would help me to accomplish my work better than would be otherwise					
4	The guidelines reflect the actual issues that I have to address in my work					
5	Using the guidelines would facilitate the delivery of citizen-focused e-Government initiatives					
6	I do not see any added value in using the guidelines					
7	I would prefer to carry out my tasks without the guidelines					
8	The guidelines do not really address the issues I expected					

2. Usability

S/N	**Usability items**	Strongly agree	Agree	Neutral	Disagree	Strongly disagree
1	I will use the guidelines when developing e-Government initiatives					
2	It was easy to understand the guidelines					
3	Overall I find the guidelines to be usable for developing e-Government initiatives					
4	I can communicate the guidelines to other people					
5	I would prefer working with the guidelines					
6	I will always seek clarification on the guidelines					
7	I was often confused in using the guidelines					
8	I do not need a professional support in using the guidelines					
9	The language used to present the guidelines is understandable					

Part 3: Additional information

Please feel free to provide us with any other information in the space provided below:

……

……

We thank you very much for your contributions you have made today. We will make sure that we make them available to you as soon as possible. Please feel free to contact us if you think there is any other thing that should have been considered.

Thank you very much

Research summary

Citizen adoption is an important aspect for the success of e-Government initiatives. Low adoption of e-Government initiatives may lead into failure and loss of investments. Therefore, governments are required to implement initiatives that are likely to be adopted by citizens. However, the process of designing and deploying citizen-adoptable e-Government initiatives, particularly in developing countries, is challenging. This is because the process requires implementers of e-Government to consider and address various issues challenging citizens to adopt e-Government initiatives. Prior to this study, limited guidance was available to facilitate the process of implementing citizen adoptable e-Government initiatives. Accordingly, we noticed the need and importance of facilitating this process. We aimed at providing an approach that will facilitate decisions for enhancing citizen adoption of e-Government initiatives in developing countries.

Tanzania, a typical developing country, has started implementing various citizen-focused e-Government initiatives. However, at the commencement of this study, limited knowledge was available concerning the adoption situation of e-Government initiatives in the country. Additionally, no guidance was available to guide the processes of implementing citizen adoptable e-Government initiatives enhanced in the country. Tanzania provided us with an appropriate setting for this study, and was used as our research context.

Currently, citizen adoption of e-Government initiatives in Tanzania is still low. This situation is caused by inadequacies in 1) organizational preparedness, 2) citizen preparedness, 3) service intrinsic issues, 4) access issues, and 5) organizational context. These issues cause an unfavourable environment for citizens to adopt e-Government initiative in the country. As a result, the initiatives experience low adoption problem because they attract the utilisation of few citizens. This situation may result into failure and loss of resources. To enhance adoption, an appropriate approach is necessary to facilitate the identification, development, and deployment of citizen adoptable e-Government initiatives.

The set of guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania is our contribution to solve the problem presented above. The guidelines provide guidance for addressing the each of the adoption issues identified in this study. The guidelines provide propositions and strategies for 1) improving organizational preparedness, 2) addressing citizen preparedness, 3) enhancing the quality of e-Government initiatives, 4) mitigating access limitations, and 5) addressing challenges posed by organizational contexts. The evaluation suggests that the guidelines are relevant, useful, and usable to facilitate the processes of planning, developing, implementing, and evaluating e-Government initiatives. E-Government implementers can utilize the guidelines to deploy initiatives that are likely to be adopted by citizens in the country.

A range of stakeholders can benefit from utilising the guidelines we are proposing. Specific stakeholders are sponsors, decision makers and developers, partners, and consultants of e-Government initiatives. Sponsors can use the guidelines to evaluate proposals and advise governments on adoptable e-Government initiatives. On the other hand, decision makers, developers, partners, and consultants are informed on strategies to consider for enhancing the adoptability of their e-Government initiatives. In this way, it will be possible to implement initiatives that will attract higher utilisation by citizens. This will contribute into reducing the risk of failure of e-Government initiatives in Tanzania, and other similar countries.

Because this study was conducted in Tanzania, guidelines may be more applicable to the Tanzanian e-Government business context. However, they can also be relevant in related contexts like the East African countries[14]. These countries have social-economic situations similar to Tanzania (UN, 2008). Other countries with closer or comparable contextual situations can also apply the guidelines. However, we emphasise that they establish and understand their contextual situations and influencing issues before applying the guidelines.

By developing and evaluating the guidelines for enhancing citizen adoption of e-Government initiatives in Tanzania, we have achieved the objectives of this study.

[14] East African Countries include Burundi, Kenya, Rwanda, Tanzania, and Uganda

However, there is always room for future improvement. Specific areas that we recommend for future research are 1) development of metrics for measuring degree of adoption, 2) utilising a larger number of cases to improve pure research outputs, 3) investigation of the interrelationship between adoption issues we identified in this study, 4) investigating possible marketing strategies in the government, 5) investigating the usage of the guidelines, 6) enriching the guidelines with standardisation concepts, 7) refinement of the checkpoints, and 8) development of a Kiswahili version of the Guidelines we have proposed.

Onderzoekssamenvatting

Het succes van e-Government is sterk afhankelijk van in hoeverre burgers het gebruiken. Geringe adoptie van e-Government-initiatieven kan leiden tot het mislukken van en verlies aan investeringen. Daarom moeten overheden initiatieven implementeren die naar alle waarschijnlijkheid zullen worden overgenomen door burgers. Het ontwerpen en implementeren van dergelijke e-Government-initiatieven is, vooral in ontwikkelingslanden, lastig. Dit komt doordat bij het implementeren van e-Government-initiatieven de zaken bestudeerd en aangepakt moeten worden die gebruik door burgers hinderen. Tot nu toe was weinig bekend over hoe dergelijke initiatieven zodanig konden worden geïmplementeerd dat burgers er ook daadwerkelijk gebruik van gingen maken. Vandaar ook dat wij het nut en de noodzaak inzagen van het faciliteren van dit proces. Onze doelstelling was een aanpak te bieden die besluitvorming zou faciliteren ten bate van de adoptie van e-Government-initiatieven in ontwikkelingslanden.

In Tanzania, een prototype ontwikkelingsland, zijn inmiddels diverse burgergerichte e-Government-initiatieven opgezet. Bij aanvang van deze studie was echter weinig bekend over in hoeverre dergelijke initiatieven door burgers werden omarmd. Bovendien bestond er geen leidraad om de in Tanzania geïmplementeerde e-Government-initiatieven voor burgers bruikbaar te maken. Tanzania was daarom een geschikt land om als onderzoekscontext te dienen.

Vandaag de dag is de adoptiegraad van e-Government-initiatieven door burgers in Tanzania nog altijd gering. Dit komt door tekortkomingen in 1) de mate van bereidheid binnen organisaties, 2) de mate van bereidheid onder burgers, 3) dienstgerelateerde zaken, 4) toegankelijkheid en 5) organisatiecontext. Deze zaken zorgen voor een ongunstig klimaat voor adoptie van e-Government-initiatieven door burgers. Dit resulteert in een lage adoptiegraad, aangezien weinig mensen er gebruik van maken. Dit kan leiden tot mislukking en het verloren gaan van middelen. Om de adoptiegraad te verhogen is het nodig de juiste aanpak te zoeken om voor burgers bruikbare e-Government-initiatieven te identificeren, te ontwikkelen en uit te voeren.

Wij trachten een bijdrage aan de oplossing van het hierboven geschetste probleem te leveren in de vorm van een aantal richtlijnen. Deze richtlijnen bieden aanknopingspunten voor het aanpakken van de verschillende problemen rond de adoptie die in deze studie worden beschreven. De richtlijnen bieden voorstellen en strategieën om verbeteringen aan te brengen in 1) de mate van bereidheid binnen organisaties, 2) de mate van bereidheid onder burgers, 3) de kwaliteit van e-Government-initiatieven, 4) toegang en 5) problemen rond de organisatiecontext. Uit de evaluatie blijkt dat de richtlijnen zowel relevant als nuttig zijn en gebruikt kunnen worden om processen rond e-Government-initiatieven te plannen, ontwikkelen, implementeren en evalueren. De richtlijnen kunnen gebruikt worden om e-Government-initiatieven te implementeren die door burgers waarschijnlijk zullen worden overgenomen.

Een scala aan stakeholders kan baat hebben bij de voorgestelde richtlijnen. Stakeholders zijn sponsoren, besluitvormers en ontwikkelaars, partners en adviseurs die betrokken zijn bij e-Government-initiatieven. Sponsoren kunnen met de richtlijnen voorstellen beoordelen en overheden adviseren over geschikte e-Government-initiatieven. Daarnaast zullen besluitvormers, ontwikkelaars, partners en adviseurs kennis kunnen nemen van strategieën die adoptie van hun e-Government-initiatieven kunnen vergemakkelijken. Hierdoor kunnen initiatieven geïmplementeerd worden die meer door burgers worden gebruikt. Dit zal de kans op mislukking van e-Government-initiatieven in Tanzania en vergelijkbare landen verkleinen.

Doordat deze studie in Tanzania is uitgevoerd, is het mogelijk dat de richtlijnen vooral van toepassing zijn op de e-Government context aldaar. Zij kunnen echter ook in vergelijkbare omstandigheden relevant zijn, zoals in andere Oost-Afrikaanse landen. De sociaaleconomische situatie in deze landen is vergelijkbaar met die van Tanzania (VN, 2008). Landen die zich in een vergelijkbare of in bijna dezelfde situatie bevinden, kunnen deze richtlijnen ook toepassen, mits ze eerst hun situatie en de zaken die deze beïnvloeden vaststellen en begrijpen.

Met het ontwikkelen en evalueren van richtlijnen voor het verbeteren van de adoptie van e-Government-initiatieven in Tanzania zijn de doelstellingen van deze studie gerealiseerd. Er is echter altijd ruimte voor verdere verbetering. Een aantal mogelijke

aandachtspunten voor de toekomst zijn 1) het ontwikkelen van een meetsysteem voor de adoptiegraad, 2) een grotere studie om de onderzoeksoutput te verbeteren, 3) onderzoek naar de onderlinge relatie tussen zaken die aanvaarding beïnvloeden, 4) onderzoek naar mogelijke marketingstrategieën binnen de overheid, 5) het gebruik van de richtlijnen, 6) het versterken van de richtlijnen met standaardisatieconcepten, 7) verfijning van controlepunten en 8) ontwikkeling van een versie van de voorgestelde richtlijnen in het Swahili.